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THE AMERICAN JOURNAL OF
**CLINICAL
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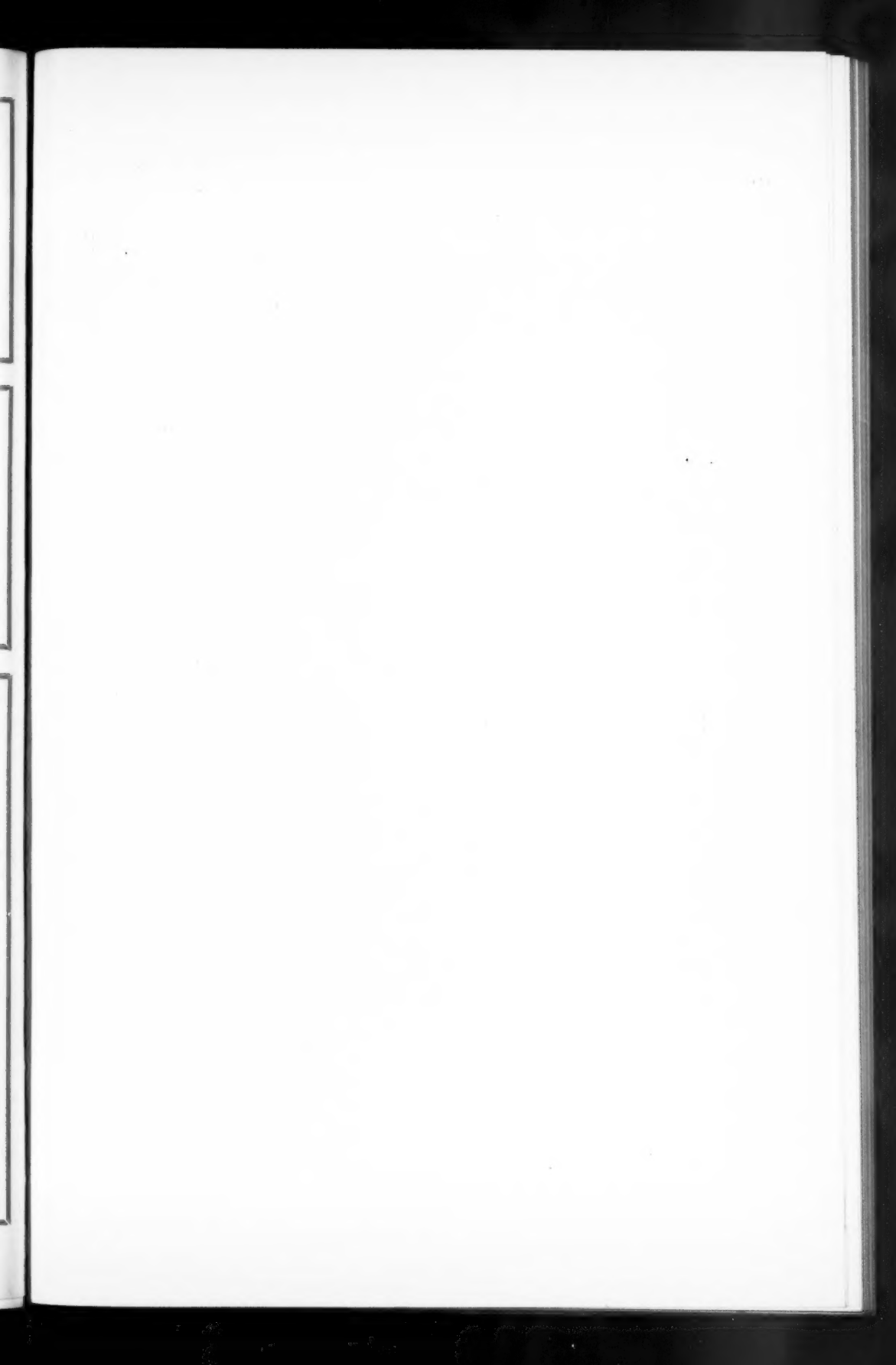
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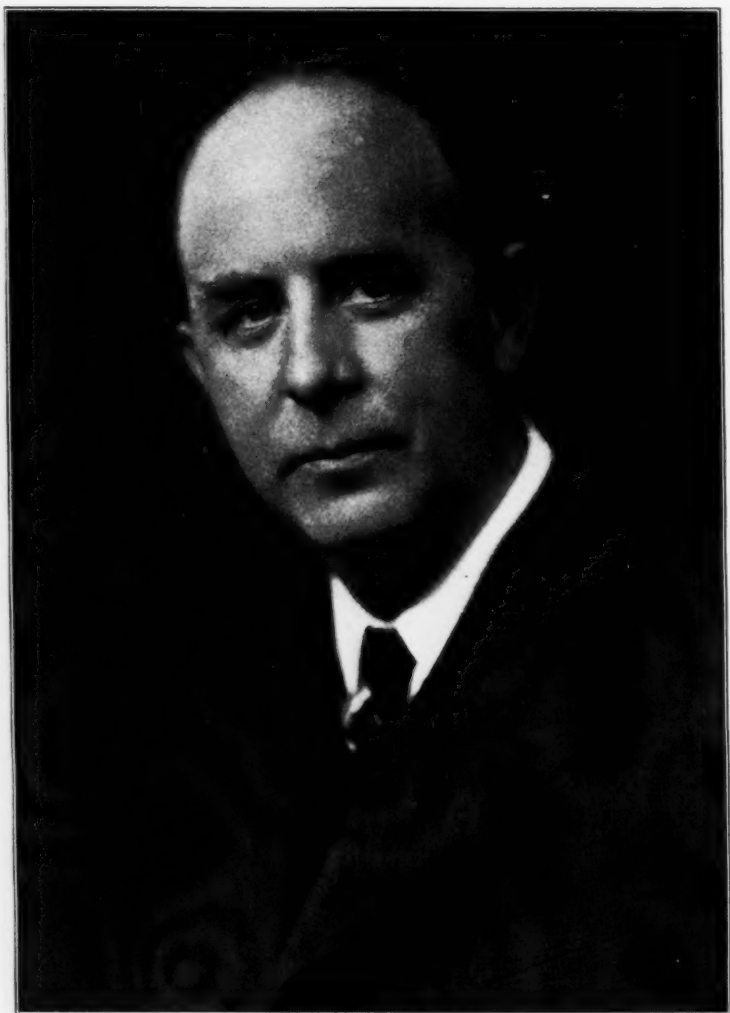
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ALFRED S. BURDICK, A. B., M. D.,

EDITOR IN CHIEF, THE AMERICAN JOURNAL OF CLINICAL MEDICINE

The American Journal of **CLINICAL MEDICINE** *Dependable Therapeutic Fact for Daily Use*

Vol. 28, No. 9

September, 1921

The New Editorial Cabinet

THROUGH the death of Dr. W. C. Abbott, the founder and Editor-in-Chief of THE ALKALOIDAL CLINIC and of its successor, THE AMERICAN JOURNAL OF CLINICAL MEDICINE, we have suffered a loss that, unfortunately, was foreshadowed by Doctor Abbott's increasing preoccupation with the affairs of The Abbott Laboratories, which made it impossible for him, in recent years, to devote much attention to CLINICAL MEDICINE. During his illness, Doctor Abbott was even less able to concern himself with journal matters. Still, his interest in his own journal naturally remained keen and affectionate to the end.

The new Editor-in-Chief is Dr. Alfred S. Burdick, who conducted the editorial policies of CLINICAL MEDICINE for many years, as its managing editor. Dr. H. J. Achard, until now, associate editor, has been appointed Managing Editor and will be responsible for the actual management of the Journal, under the old-established policies of service and help extended in full measure to the general practitioner.

Dr. William Rittenhouse, who is well known to the readers of CLINICAL

MEDICINE through his splendid contributions, as also through many editorial articles, will head the staff of contributing editors, and we are happy to announce that we have secured, as members of this staff, Dr. Gustavus M. Blech, Lieutenant-Colonel, Medical Corps, U. S. Army during the World War, now Colonel, Medical Corps, Illinois National Guards; Dr. Frank B. Kirby and Dr. Joseph F. Biehn, all of Chicago.

Through these accessions to the editorial staff, we shall be in a position to deal with the numerous problems of the general practitioner from the viewpoint of the specialist as well as that of the "general man." Thus, we hope to afford to our subscribers a constantly improving service.

Important plans for editorial expansion have been approved and others are being considered. CLINICAL MEDICINE will continue as it has in the past to fill the need for an entirely practical, enjoyable, readable and thoroughly up-to-date monthly medical journal, edited by doctors with experience on the firing line, for doctors in daily practice.

STUDIES IN ENDOCRINOLOGY

In the last issue of *CLINICAL MEDICINE*, we published the first instalment of an article on the relation of the adrenal glands to modern medicine. This article was contributed by Dr. Reginald Weiler, of New York City, who is professor of Chemistry in Carver College; it contains much important information on the subject of the adrenal glands which have, in recent years, been found to constitute essential and vital organs. The present article will be followed by one dealing with the thyroid and the parathyroid glands, after which the pituitary gland will be studied.

We feel safe in saying that this series of articles on endocrine studies will contribute greatly to our knowledge concerning these highly important organs which are, as yet, understood so imperfectly. For years, we have been interested in the problem of the glands with internal secretions, and we take it for granted that our readers share our anxiety to learn as much as possible regarding them.

In order to accomplish our purpose, we have made arrangements for other papers, which deal with the clinical application of studies in endocrinology and through which much good will accrue to all of us. Practitioners who have had clinical experience with the remedies based on these studies, whether they be glandular substance or extracts, or drugs exerting stimulating or sedating effects upon certain endocrine glands, should contribute reports of their experiences for the general good.

The policy of adapting oneself to circumstances makes all ways smooth.—Lavater.

SPAHLINGER'S TREATMENT FOR TUBERCULOSIS

Several physicians have written to us inquiring about the Spahlinger serum for tuberculosis which has found more or less newspaper publicity in this country and abroad. Unfortunately, we were not in a position to tell them much about it. We have the impression that Spahlinger is somewhat on a par with Voronoff who distinctly prefers newspaper publicity to the legitimate method of announcing his work in medical journals. In this, we may be wrong.

However, *The Prescriber* (April 1921) gives space to a brief discussion of the sub-

ject. From this it appears that Mr. Henry Spahlinger is a Swiss bacteriologist. He does not seem to be a physician and seems to be virtually unknown. At any rate, his name does not appear on the list of medical practitioners in Geneva.

Early in 1914, Mr. Spahlinger presented to the French Academy of Medicine a preliminary report of his work in the preparation of an antiserum for tuberculosis.

More recently, a further communication was made, this time to the Academy of Sciences. It was presented through Professor D'Arsonval. The second report included the treatment of cases by two British physicians, Doctor Croucher and Dr. Leonard Williams, the former of whom stated that a number of patients had been treated by him with this serum in 1913; that all were cases of advanced pulmonary lesions at the time, and that all are still alive and to all appearances normal and free from the disease. Doctor Williams describes a number of cases of surgical tuberculosis and of open pulmonary tuberculosis with bacilli in the sputum, and all the symptoms of advanced disease; all these cases are now free from active disease, and the condition of the patients is good.

Dr. W. Camac Wilkinson, in a communication to the *British Medical Journal* of February 26, states that he has studied the evidence in favor of M. Spahlinger's treatment and discussed his point of view with him at a private interview. Doctor Wilkinson adds: "In fact and in principle, M. Spahlinger's method is the self-same method which I have been using for thirty years, and have been advocating in season and out of season for twenty years. M. Spahlinger even has the same views upon 'mixed infection' which I have unceasingly championed since the year 1896. Moreover, I can produce at least five times as many cases as M. Spahlinger can, which were treated in 1910, 1911, and 1912, and are still alive and at work in 1921. Therefore, I view M. Spahlinger's method in no hostile spirit; indeed, I welcome him as an ally. Our methods are similar, and may be the same. Possibly M. Spahlinger has improved the means of securing immunity by using the products of the tubercle bacillus in a somewhat different and better way or in a modified form." Dr. Wilkinson then goes on to describe the prin-

ciples of his method of antigenic treatment, full particulars of which may be found in his book, "Tuberculin in the Diagnosis and Treatment of Tuberculosis."

So far, the only details of the method, as given in the paper read by Professor D'Arsonval, are that "acute cases are treated by means of complex antitoxic and bacteriolytic serums, and that chronic cases are dealt with by vaccination with a series of antigens and ferments, the former of these being derived from the bacillary substance of the tubercle bacillus." Than this, nothing could well be more vague, and no bacteriological details are furnished.

We have, therefore, another instance of a somewhat premature announcement of a remedy for tuberculosis such as has been searched for industriously for almost forty years. We not only regard as unjustified procedures which arouse futile hopes and expectations in unfortunate victims of tuberculous disease—we even believe that they are worse than unjustified.

It is not possible to produce or discover a or the remedy for tuberculosis which will be actually specific in the sense that it may be given, with definite expectation of success, to virtually every patient. This is based upon the fact that clinical tuberculosis always is a complicated disease which does not have a uniform etiology.

While simple, uncomplicated tuberculosis can be, and is, opposed successfully with several specific remedies, notably anti-tuberculosis vaccines that are now available, the clinical forms, being invariably complicated with associated bacterial injuries, require essential additional treatment which necessarily must be based upon conditions existing in the individual case. It is, therefore, futile and vain to expect one definite treatment that could be depended upon to benefit all patients afflicted with tuberculous disease.

Physicians should get this matter clear in their minds and should not permit their patients to be stamped by haphazard newspaper reports.

Don't worry when you stumble—remember, a worm is about the only thing that can't fall down.

THE TRUTH ABOUT VIVISECTION

Recently, we received a letter from The American Anti-Vivisection Society calling attention to an article in the *Woman's*

Home Companion for July, on the subject of vivisection, and asking us to write to the editor of the *Companion* protesting "against this attempt to influence the opinion of readers who may not have opportunity to learn the real truth of the important subject here garbled and misrepresented."

It was claimed in this letter that the article in question contained a collection of medical slanders and misstatements about antivivisection, published under a most misleading heading and with editorial endorsement.

We took pains at once to procure a copy of the *Woman's Home Companion* for July and to read the article which had been contributed by Mr. Ernest Harold Baynes. Needless to say, in complying with the request of the letter from The American Anti-Vivisection Society, we wrote to the editor of the *Woman's Home Companion*. However, in expressing our views about this article, we commended the publication of a communication in which Mr. Baynes had succeeded in nailing the numerous inaccuracies, half-truths, wholly untruths and innuendos that have been, for so long, a stock-in-trade of the antivivisection literature.

First and foremost, Mr. Baynes has investigated the constantly recurring assertion that eminent physicians, over two hundred and fifty medical men "of the highest intelligence and honor," condemn vivisection and demand its abolishment. Most of these men lived from fifty to one hundred years ago, and, if they were eminent, it was not in matters medical. At any rate, they lived long before modern methods in animal experimentation were inaugurated.

If we come to the two really eminent physicians who are constantly cited in antivivisection literature, namely, R. Lawson Tait, and Sir Frederick Treves, it is unfortunate that only Doctor Tait's opposition to vivisection is announced so blatantly and that his later change of opinion and distinct recantation of his unfavorable views is ignored by antivivisection prophets. As to Sir Frederick Treves, the *London Times* of April 18, 1902, contains a statement from his pen referring to the fact that certain of his remarks have been cunningly isolated from the context and have been used in advertisements, pamphlets and speeches to

condemn all vivisection experiments as useless. He adds "no one is more keenly aware than I am of the great benefits conferred on suffering humanity by certain researches carried out by means of vivisection."

The worthlessness of antivivisectionists' claims (1) that animals are ruthlessly tortured in the laboratories to gratify the curiosity of heartless doctors who gloat over the agony of their helpless victims; (2) that no benefit to mankind or to animals has ever been derived from vivisection—is placed into its true light. Mr. Baynes himself visited various laboratories in which animal experimentation is resorted to in the course of necessary researches, and he cites rules which are rigidly adhered to and which prove definitely that animals are not treated unkindly. This, as a matter of fact, is self-evident for the simple reason that any brutality, carelessness, needless pain inflicted upon the animals, whether under anesthesia or not, would render the experiment futile and would make it impossible to draw exact conclusions.

Our readers may find it of service to learn of some of these rules. We will copy three of those in the operating room of the laboratory of a great cancer hospital in Buffalo, New York:

1. Vagrant dogs and cats brought to this laboratory and purchased here shall be held at least as long as at the city pound, and shall be returned to their owners if claimed and identified.

2. Animals in the laboratory shall receive every consideration for their bodily comfort; they shall be kindly treated, properly fed, and their surroundings kept in the best possible sanitary condition.

3. In any operation likely to cause greater discomfort than that attending anesthetization, the animal shall first be rendered incapable of perceiving pain and shall be maintained in that condition until the operation is ended. Exceptions to this rule will be made by the director alone, and then only when anesthesia would defeat the object of the experiment.

At Johns Hopkins University, there is a sign in the Hunterian Laboratory which reads, "Any attendant who strikes a dog is to be discharged at once."

In his splendid article, Mr. Baynes enumerates just a few of the instances demonstrating that animal experimentation, as it is done today, has resulted in untold good to mankind and to animals. It has made

possible the diminution and the successful treatment of many infectious diseases. It has been instrumental in devising means to lessen human suffering and to diminish the morbidity and mortality of many pathological conditions.

The persistence with which antivivisectionists continue to publish broadcast false statements and to ignore facts should be resented by thinking people. Fortunately, their numerous attempts to influence legislative bodies have, so far, failed to bring about the abolition of the use of animals in the study of disease and of the means to be employed against it.

What the eye sees once, is better than what the ear hears a hundred times.—Japanese Proverb.

THE EIGHTEENTH AMENDMENT AND THE VOLSTEAD ACT

In an article entitled "Business Prosperity As a Permanent Asset," Mr. Roger W. Babson, commencing a series of articles on "Making Good in Business," says, among other things, that "an optimistic factor in our present business situation is national prohibition. Before the prohibition act was passed, \$3,000,000,000 were spent annually for drink. Now that \$3,000,000,000, that was formerly spent for drink, goes to the buying of merchandise, the building of homes, the furnishing of homes and the starting of savings accounts. No matter what interpretation may be put on the law or what new legislation may be enacted, of this we are quite certain—the same \$3,000,000,000 which formerly went to drink will hereafter be used for stimulating the regular channels of business. It will be used to buy merchandise, start savings accounts and do those things which tend to make people happy and prosperous."

We have before now gone on record as approving fully and unreservedly of the eighteenth amendment, expressing our opinion to the effect that the repeal of this constitutional amendment and the return of the saloon would constitute a serious calamity.

However, approval of the constitutional amendment establishing national prohibition is an entirely different thing from the act of Congress known as the Volstead Act and which formulates the *modus operandi* through which the provisions of the eighteenth amendment are to be carried out.

A few weeks ago, on June 22, to be ex-

act, the Honorable Harry B. Hawes, of Missouri, addressed the House of Representatives in "opposition to delegation by congress of uncertain discretionary powers." In this speech, Mr. Hawes shows up the serious defects of the Volstead Act which, while it has for its purpose the worthy object of eliminating the "bootlegging" physician, quite unnecessarily and gratuitously assails a great profession, the medical, and violates a fundamental of Anglo-Saxon law.

Mr. Hawes points out that the eighteenth amendment prohibits the manufacture, sale, import and export of intoxicating liquors for beverage purposes, but that it does not contain any constitutional provision against the use of such liquors for mechanical, medicinal or sacramental purposes. The spirit of the constitution (including the eighteenth amendment), therefore, as well as the equity and good law do not brand as a crime the prescribing of alcoholics by the physician for the definite purpose of benefiting his patients. Yet, this is what the Volstead Act virtually does—under certain conditions which are so absurd that it is astonishing that this act ever could pass Congress.

As the Volstead Act stands now, it has been declared by the Commissioner entrusted with the enforcement of the prohibition amendment that any physician who has secured the necessary license may issue one hundred prescriptions during a period of ninety days, and, if he writes one hundred and one prescriptions without securing the permission of the Commissioner (a layman) by proving to him that, for some extraordinary reason, the additional prescription is necessary, the physician becomes a criminal under the law.

Of course, it can happen very easily that one physician may have occasion, during a period of ninety days, to write one hundred and one or one hundred and fifty, or even two hundred prescriptions for alcoholics in perfectly good faith and for indications that, in his opinion, are clear-cut and definite—while another physician, who is not at all in the habit of employing alcoholics (preferring to resort to other drugs) may issue only fifty or seventy or ninety-nine prescriptions within that period of time, every one of which virtually amounts to a bootlegging transaction, the doctor having written them

simply because he is a good fellow—for his friends, and for a monetary consideration.

Physicians will agree with the Honorable Mr. Hawes (whether they ever prescribe alcoholics or not) that the provisions of the Volstead Act are seriously unfair, that they constitute an insult to the medical profession and work unnecessary and intolerable hardship upon many physicians and numerous patients. It is not a question of whether alcohol is or is not a useful and acceptable remedy under certain conditions in the opinion of the Commissioner, or of the American Medical Association or THE AMERICAN JOURNAL OF CLINICAL MEDICINE, or of any other agency. The question is simply that a physician should not be interfered with in the bona fide prescribing of any drug that he sincerely believes to be indicated and useful under conditions that he confronts. If the physician is interfered with, the provisions of the eighteenth amendment are not enforced in the spirit of the constitution.

Let us not misunderstand. The present editorial writer never prescribes alcoholics, nor does he care to act against the constitutional amendment by using them for beverages. However, we are convinced that this eighteenth amendment, which in itself is a good thing, should be enforced in a manner working less hardship upon physicians and exposing them less arrogantly to insult, insinuation and unjustified innuendo.

ALCOHOL IN THE INDUSTRIES

We have repeatedly called attention to the unwisdom on the part of the government to interfere with the perfectly legitimate use of alcohol in the industries, calling attention to the fact that, as far as physicians and druggists are concerned, alcohol is a highly important solvent for a great many plant drugs and also an essential medium for many others. We need refer only, by way of instance, to the class of vegetable remedies known as "specific medicines" and prepared, among others, by Lloyd Brothers, in Cincinnati. These preparations usually carry a considerable percentage of alcohol which, though, is urgently necessary to maintain the quality of the remedies and could not possibly lead to tipping.

While we have accepted the eighteenth

amendment to the constitution, doing away with the use of alcoholic beverages as beverages, it is difficult to follow the devious mental peregrinations of certain ones of our law makers to whom the very word alcohol seems to be so objectionable that it presents a signal for hostile activity. For instance, the so-called Volstead anti-beer bill, known in the official records of the House of Representatives at Washington as H. R. 6,752, does not stop with preventing the prescribing of beer (and, we believe, of light wines) for medicinal purposes. If that were all, no essential injury would be wrought by it, we believe.

However, as the American Chemical Society points out, in a recent letter, "this very bill spells more disaster to the industries of this country than any other proposal in years. It is true that the seeming purpose of the latest Volstead bill is, to upset previous rulings concerning beer as a medicine. If it stopped there, no substantial objection could be offered against it.

"However, under the cloak of preventing the use of beer as medicine by physicians, H. R. 6,752 would actually permit any chemical or other manufacturing industry using or depending upon alcohol to be shut down within thirty days. And, what is more dangerous, no appeal could be made to the courts.

"That is only one provision of the proposed new law. Another section would require the posting of permits for twenty days before this basic chemical for many industries could be secured. Power is also given to compel the posting of a copy of the application upon the factory or business house. Then, any one of a group of local, state or national officials may file a protest to it. By the time the red tape involved was unsnarled, any reputable company, concern or corporation might be in the hands of the Sheriff or the Federal Courts in a bankruptcy proceeding.

"If any more sensational or autocratic procedure is possible, the scene of it would probably be located in Russia or some other remote center of governmental disorder.

"Fortunately, the bill has not passed the House. But, the danger is acute. It may be passed within a few days, unless the manufacturers of this country make a protest. The first step has been taken. It was inaugurated by the New York Section of the American Chemical Society. A protest has been made to the Rules Committee of the House of Representatives. It is directed at H. R. 6,752.

"Many important industries are now confronted with the supreme test. If a group of fanatics can jam this bill through now, while the leading manufacturers of the

country have been lulled to sleep, anything is possible. The duty of the hour is, to write or telegraph a protest to your senators and congressman today against this real menace to American industries."

We repeat, that we, ourselves, can see no great harm in that provision of this Volstead bill which purports to prevent the clinical, or remedial, employment of beer and light wines. At that, it is questionable whether it is just and fair to interfere unduly in the old-established privileges of the medical profession. However, let that stand.

When it comes to attempting to curtail the necessary use of alcohol in industrial processes, that is another matter entirely. Such interference is not only absolutely unjustified, it is highly reprehensible and constitutes a serious attack upon those of our home industries which depend upon alcohol as an essential reagent for numerous processes. Let our law makers in Washington not be carried away by a mistaken enthusiasm in what they may conceive to be a just battle against "King Alcohol" and all its work. Let them discriminate and deal with these very important matters in accordance with common sense and actualities.

Heroism is a capacity of the will to subjugate impulses or circumstances adverse to the fulfillment of a duty dictated by conscience. Any victory of the spirit over the flesh fought within a man's mind may require heroism.—Some of the finest examples of heroism displayed in this war were set by noncombatants of the medical service or among chaplains.—Henry DeMan, "The Remaking of a Mind."

MEDICAL RESTRICTIONS OF THE VOLSTEAD ACT

At the recent meeting of the American Medical Editors' Association, held at Boston, Massachusetts, the subjoined resolution was passed which explains itself and with which all practitioners will surely be in sympathy. The resolution is as follows:

WHEREAS:—

The medical restrictions of the Volstead Act, together with its various administrative and other interpretations and rules and regulations and enforcements, and so forth, constitute, in some of their effects, indictment of the medical profession and harassment of the medical practitioner and the sick, and are obstacles to free pursuit of honest medical judgment and therapeutics, and have reacted to the detriment of society and the public health and are opposed to public policy:—

AND WHEREAS:—

Some of these restrictions and rules and

regulations and interpretations, and so forth, are not based upon consensus of medical experience and practice and established usage:—
AND WHEREAS:—

It is apparent that they have not been framed and interpreted and administered with full appreciation of all matters involved:—
AND WHEREAS:—

The precedent established by the Volstead Act in restricting medical practice should, if physicians value their therapeutic liberty, be met with a protest that will command attention.
AND WHEREAS:—

The point at issue is the right of the physician to select his remedies, and to decide what doses of these remedies each patient requires:—
AND WHEREAS:—

This issue in no wise affects and has nothing to do with propaganda either for or against prohibition, but is purely a matter of preserving the necessary rights of the physician in the interest of public health and public policy:—
BE IT THEREFORE RESOLVED:—

That the American Medical Editors' Association protests against further undue regulation of therapeutic procedure by statutes or by administrative interpretation or regulation:—
AND BE IT RESOLVED:—

That the Association requests of the proper authorities a review and revision of such existing statutes or rules or regulations as may be unduly restrictive of the therapeutic judgment and procedure of physicians—

We ask this for the preservation of the necessary rights of the medical profession and in the name of public welfare and wise public policy.

Love of one's own country need not involve any hostility towards another country. On the contrary, if it be sincere and enlightened, it should tend to strengthen the ties of sympathy between them. Real patriotism has an inherent tendency to become universal, just as love of individual men and women helps one to love mankind.—Henry DeMan, "The Remaking of a Mind."

THE UNGRATEFUL REPUBLIC

It was said, long ago, that republics are ungrateful. It seems to be true. Our boys, who helped save civilization from destruction on the fields of France, are getting the rawest deal in history. Those who laid down their lives in No Man's Land were more fortunate than their comrades who have come back broken in health, with shattered bodies and minds, to receive their reward from a grateful (?) nation.

Of the 640,000 discharged as disabled, 513,000 have been classified: 46,000 as tuberculous, 76,000 with mental and nervous disorders, and the rest as "general." Surely, the 122,000 of those two classes were entitled to prompt and efficient care; yet, on the first of March, 1921, only 24,000 were being cared for in hospitals, and less than

half of these were in government institutions. Think of it! Two and a half years after the armistice, this great and rich nation has hospital accommodation for less than 12,000 out of the half million poor fellows to whom we owe so much, and to whom every month of delay means less hope of recovery. There are another 12,000 scattered over the country, in private institutions of various degrees of efficiency, some of them so utterly unfit and unsanitary that the boys assigned to them broke out in mutiny.

How many of these physical wrecks are tramping the streets looking for work? How many of them are peddling trinkets from door to door—really a form of begging? How many have turned to crime in their desperation? How many, embittered by neglect, have become receptive pupils of anarchistic and bolshevistic propaganda, thus swelling the ranks of the dangerous classes?

Was it a cause for astonishment that Bragadier General Dawes, at the head of the committee appointed by the President to investigate the matter, rendered the air of the committee room blue with profanity as the disgraceful story was unfolded? Was it any wonder that the Gold Star Mothers, in session in New Jersey, passed a resolution in which they thanked God that their boys were sleeping under the peaceful poppies of France, rather than suffering the agonies and disappointments of trying to get back health and compensation, as these things are managed by the Government today?

And, why is it? Is the task too big for Uncle Sam? Not at all. When the war came, we handled an infinitely bigger one—unpreparedness. We wasted billions of dollars, and sacrificed many lives unnecessarily because of that unpreparedness. But, the war had to be won and we went at it in the true American spirit of overcoming all obstacles. Unfortunately, when the war was won, we let down the tension too soon. Those who had sacrificed their all got words of praise and little else. A little more of the spirit that won the war, and a few of the millions wasted through hurry and unpreparedness, would have built hospitals enough for all, and it would have saved our honor.

Why do things move so slowly? The answer is, red tape, lack of coordination between departments, indifference of Con-

gress, and apathy of the people. The people of this republic do not mean to be inhuman; yet, that is just what we have been, and are, through our indifference. Let us call a spade a spade. To let thousands of those poor fellows die of tuberculosis when prompt care would have saved many of them, is inhuman, brutal, ungrateful.

If every citizen of this great nation had done his duty, there would have been such a storm of indignation that Congress would have been compelled to sit up and take notice. Will we raise such a storm? We will—not. It is easier to let George do it. How long, O Lord! how long!

A polite man is one who listens with interest to things he knows all about when they are told him by a person who knows nothing about them.—Judge.

HIGH MORTALITY IN MOTHERS AND INFANTS

In the United States in 1919, one mother died for every 135 babies born, and every eleventh baby born died before it was a year old. That these rates are excessive, is shown in "Save the Youngest," a bulletin issued by the U. S. Department of Labor through the Children's Bureau, and just revised to compare the latest rates for the United States with those for foreign countries.

Six countries are shown to have a lower infant mortality, and 16 in a group of 17 a lower maternal mortality than the United States. Not only do we lose more mothers in proportion to births than practically any other civilized country, but we apparently lose more on an average each year than the year before. Whereas in other countries there has been a decrease in the death-rate for childbirth, the rate in the United States rose from 6.1 per 1,000 births in 1915 to 6.2 in 1916, 6.6 in 1917 and 7.4 in 1919. Moreover, in this country, there is no appreciable decrease in the proportion of babies who die from causes largely connected with the care and condition of the mother.

Experience has proved, the bulletin points out, that thousands of deaths of both mothers and children could be prevented every year by public measures for the protection of maternity and infancy. In New York City, among 4,496 mothers who were supervised by the New York Maternity Center Association before and after

the birth of their babies, the maternal mortality rate was less than one-third the rate of the United States and the rate for deaths in early infancy was less than half that for the city as a whole. In other cities of the United States and in foreign countries, the institution of infant welfare measures has been followed by greatly decreased rates.

We apprehend that this high mortality rate prevails particularly among the ignorant strata of our population and more especially among those foreigners who, living in colonies, are but little open to the Americanizing influence and to popular education. Their methods of living, which they have brought from their home countries and continue here, are anything but favorable. The fact that they are tended mostly by ignorant midwives of their own nationality and do not call upon the physician, except in case of dire need, adds to the difficulty.

While the Children's Bureau of the Department of Labor advocates health centers among other excellent means to combat this serious condition, we are convinced that the health-center idea is not the best possible method—at least not in our country. The remedy lies rather in a better Americanization and education of the immigrants, especially those coming from the lower strata of society in their own country. Closely populated tenement districts should be cleaned out and facilities should be given to these people to live in a manner more conducive to health and development.

It goes without saying that trained attendants at child-birth, adequate hospital service, popular education, and so forth, are urgently required. These, however, are insufficient to correct the evil if the living-conditions of the people are not ameliorated.

THE CYNIC

We were talking with a gray-haired veteran of the pill and lancet, and the conversation drifted to the subject of ingratitude in patients. Said the old doctor:

"The cynic was wrong—as he usually is—when he originated the saying that 'gratitude is a lively sense of favors to come'. That is the cynic's favorite occupation—misrepresenting the motives of those whom he is incapable of understand-

ing. He thinks that other people are as insincere as he, and shallow thinkers quote the epigram as if it were a gem of wisdom.

"I have passed through an experience which proves that the epigram quoted is a slander on human nature. In a long lifetime of the general practice of medicine, I have met two classes of patients: those who are grateful and those who are cold-bloodedly indifferent. The proportion of the former was reasonably large. Finally, misfortune and ill health came to me, and I was helpless. The grateful ones showed the sincerity of their gratitude by doing all in their power to lighten my burdens, and, it was not in expectation of favors to come; for, the circumstances were such that they all knew I would never be in a position to recompense them. Indeed, that fact seemed to increase their desire to show the sincerity of their gratitude. Said one of them: 'When you stood by us in our hour of trouble we knew that we could not adequately recompense you, and now we rejoice that we can help you. You must not feel that you are under obligation to us; you are merely giving us the opportunity to do what we have long wished to do.' Nobody need tell me that gratitude is merely a form of selfishness."

The old gentleman went his way, and we fell into a brown study, ruminating on the meaning of the word "cynic". The old Greeks who invented the term knew their business. It is from *kyon*, dog, hence, *kynikos*—dog-like. What could better express the idea than the reference to the envious, snarling cur? Still, to call a man a cynic is almost a slander on the dog. The faithful and affectionate four-footed friend of man is himself a refutation of the innuendoes of the cynic.

Of course, we are not reflecting on the Greek school of philosophers called the Cynics. Their principles were of quite a different sort.

It isn't so much what a fellow's doing as what he sees ahead that keeps a spring in his step and his chest filled out.—Oney Fred. Sweet.

ON USING HYPNOTICS

Some months ago, in these pages, we called attention to the timorous subscriber who, scarcely less often than the timid surgeon, fails because of his very timidity. Of nothing perhaps is the former more

distrustful than of that class of therapeutic resources called hypnotics. This feeling is in a way quite natural. It springs from long and more or less unhappy experience with such older agents as chloral, trional, sulphonal and the bromides.

But, time brings better things. After chloral and the bromides, came barbital; or veronal, as the hypnotic was called in pre-war days while it was still a foreign proprietary. Barbital is virtually safe for the general run of patients and in the ordinary therapeutic dose, including those with severe heart and kidney lesions. Nor has such a dose any appreciable effect on the blood pressure and respiration, according to our best authorities.

The toxic dose, as given in "New and Non-Official Remedies", page 82, last edition, ranges from 8 to 10 Grams (120 to 150 grains). The ordinary therapeutic dose is 15 grains, maximum. There is, therefore, a wide margin of safety for the patient. This is all the more apparent when, in practice, 10-grain doses are found to suffice for most patients, affording sleep or pronounced sedation lasting from six to twelve hours. Frequently, 5-grain doses will prove adequate.

In view of its wide usage, the fatalities blamed to barbital have been few and quite inconsiderable. Probably, the hypnotic in these cases was grossly misapplied. Even extremely large doses have been recovered from. A case is described by *Monro*, of a man surviving a dose as large as 7½ Grams (112.5 grains). Delirious patients require rather large doses, over and above that given as the maximum therapeutic dose. Up to 45 grains may be given in such cases. *Porten* says, he has given as much as 60 grains in years of practice without a mishap.

Quite recently (*Med. Record*, Dec. 11, 1920), a case was cited in which fourteen 5-grain tablets were taken within 36 hours and caused the patient to fall into a sleep which lasted for days. This instance suggested its use in status epilepticus, with happy results from 30 grains in divided doses. It is probable, thinks the author, that, in morphinomania, a week's sleep would eliminate the pain and distress from withdrawal of the drug. *Goetz*, in fact, uses a closely allied drug in this condition, with salines to aid elimination; he gives frequent doses till the patient is in a state of

somnolence and withdraws the morphine after three or four days.

It has been affirmed that barbitol is habit forming; but, this assertion is without support in the way of concrete evidence. A search of the literature reveals little, although an unpublished report cites two cases of this sort; a young man who, after daily ingestion of large quantities, is said to have lost his mind and to have died in an asylum; and a woman now living whose craving for the drug is said to be uncontrollable. Such rare cases mean very little. The most benign thing on earth may become a curse with excessive use. Then, too, it is conceivable that such consequences as described may be only apparent; it may happen that some weak-minded person about to collapse was at the moment resorting to the hypnotic and the hypnotic was blamed. It is also conceivable, inasmuch as he is a great liar, that a morphine-addict might purposefully seek to hide his craving for poison behind a legitimate and commonly prescribed drug such as barbitol. One must not overlook this, when exceptional instances of addiction to barbitol are called up.

Against these, countless instances can be cited of patients in no wise harmed but only benefited. The writer knows a man who has taken barbitol intermittently for four years; in his case it has served him beneficently and never otherwise.

That doctor need not fear barbitol who uses it intelligently. He will avoid it, as already suggested, in severe heart and kidney lesions. He will give doses no larger than necessary to produce the results wanted. When necessary to give it a long time, he will stop its use for a few days at intervals of a week or so, this because barbitol is a drug but slowly eliminated.

In simple and febrile insomnia, barbitol is, as a rule, a beneficent recourse. The patient needs sleep. As a fever patient, he may be tossing and fidgeting about. A good hypnotic will make him comfortable and conserve his strength, thus helping towards recovery. Why withhold it? To let the patient worry along day after day, night after night, without sleep, is a mistake. It injures him in the long run, and, to the doctor, such passivity is certainly discrediting.

Further, the remedy is useful for quieting the nervous or hysteric patient and for

controlling the alcohol addict in his wild moments. It is a hypnotic one may administer without misgivings in the larger doses necessary for managing the most disturbed cases.

Kogler recommends it for nervous heart palpitation. In doses of 5 to 10 grains at bedtime, says he, it quiets the tremulous heart, the irregular beat of which interferes with sleep.

It is no disgrace not to be able to do everything; but to undertake, or pretend to do what you are not made for, is not only shameful, but extremely troublesome and vexatious.—Plutarch.

SURGERY NOT ACCORDING TO HOYLE

There are two classes of surgeons: namely, those who operate "according to Hoyle" and those who do not.

The former worship at the shrine of their college doctrines and atlases, and they would no more think of deviating from the "standard" than a devout Christian would dare alter the wording of a prayer.

The latter (we exclude, of course, the incompetent surgeons), on the other hand, have the courage of their convictions; they do not recognize the infallibility of "authority." They blaze new trails, they think out each case as a problem to be solved, not according to Hoyle, but according to a philosophy unfettered by regulations.

The former are designated by real surgeons as "routinists," as "surgical carpenters" who practice their profession by rule of thumb, the latter as artists and scientists.

How often have we followed a group of younger surgeons out of the amphitheatre, where they had just witnessed a complicated operation, and heard them passing judgment on the experienced operator because his technic differed from what they have seen illustrated in their surgical bible. That the experienced surgeon may have had reasons to vary his tactics to attain a desired end never enters their minds—to them he had committed the unpardonable offense of not having played the game according to Hoyle.

Neither did the Americans in the last World War. According to our unfriendly and friendly critics, we did not follow the textbooks containing the dicta of Napoleon, von Moltke or Balck, but we won the war

just the same, and, as one distinguished general told the writer of this editorial, "perhaps we won the war *because* we did not play the game according to Hoyle."

It is refreshing, therefore, to have a distinguished Chicago surgeon, like Dr. L. L. McArthur, appear before the Chicago Medical Society recently and there present a paper in which he raises the question whether the experienced surgeon is ever justified in deviating from the accepted standard of radical surgery in carcinoma.

Doctor McArthur answers the query affirmatively and supports his contention by actual cases of carcinoma of the tongue, lip and elsewhere, in which comparatively simple excisions have been performed with favorable result.

Doctor McArthur had in mind, to furnish a precedent in the event of a malpractice suit.

We are not interested in this phase of his paper except to point out that, as no one can foretell what an unscrupulous lawyer and a pigheaded jury will accomplish by way of miscarriage of justice, surgeons who have the courage of their convictions to deviate from the "common practice" should guard their interests by explaining to their patients the nature of the proposed operation in the presence of witnesses or, better still, draw up a statement to be signed by the patient.

We are interested in a purely professional phase of the question, and that is: We have been so convinced that nothing but radical surgery can cope with carcinoma, that we have violated one of the most sacred obligations of every surgeon, namely, not to mutilate the human body; and, now, it appears a bold venture to content oneself with simple excisions. How can one foretell that such a deviation from the accepted standard will not end in disaster?

Exempla docent. We are no longer confronted by mere theories or hypotheses but we are fortunately able to base our opinion on actual facts. If we had no other resource but surgery for the treatment of carcinoma, then there could be no further discussion of the subject; for, the surgeon who would content himself to remove the "primary focus" and leave the region showing enlargement of the lymph-glands severely alone, would, indeed, be guilty of gross negligence. Fortunately, though, we possess,

in the x-rays and radium, especially the latter, agents which have a decided and beneficial influence on malignant disease, provided, of course, that these agents are administered by specially trained men.

While in one case radical surgery may be the very proper thing to do, say in a case of carcinoma of the uterus, in other cases, especially those of the face, which would naturally result in visible disfigurement, or in the case of organs the removal of which would destroy an important function, the conscientious surgeon will weigh all the circumstances with great care and decide on the same course that he would wish applied to himself were he the victim instead of the healer.

The following two cases illustrate our point:

A business man in the prime of life noticed a hoarseness which did not yield to ordinary treatment for "laryngitis." On the advice of his family physician, he consulted a throat specialist who recognized a growth on the vocal cord and finally expressed the idea of malignancy. Specialist after specialist was now consulted. Finally, the patient came under the writer's care, practically ready for operation.

Such an operation was tentatively declined by us. After a series of preliminary examinations which established the malignant character of the growth, x-ray and, later, radium treatments were administered, with the result that the growth disappeared in toto and the voice improved; it is still improving. Here we have a case of an important organ and function (speech) saved with little discomfort and no risk to the patient.

Another case is that of a young marine-corps officer who came to us for advice for what was proved to be an epithelioma of the lower lip. Owing to the glandular enlargement beneath the chin and the neck, several surgeons had demanded that he submit to incisions which would enable them to excise all the affected glands. His face would have been scarred very seriously, and the patient hesitated.

We decided on a simple excision of the growth under local anesthesia, a few carefully placed sutures restoring the lip defect. On the site of the growth, chin and neck, a series of x-ray and, later, radium treatments was given. The entire trouble disappeared. Conservatism in this case pre-

vented at least a constant source of annoyance and chagrin to a robust, young and sensitive man.

The rules which can be formulated from the foregoing explain themselves. Individualization of every case is after all the *conditio sine qua non* of surgery. By thoughtfulness and familiarity with the advances in the various disciplines of medical science, we can do much to lessen the fear of capital surgery, since its palpable beneficent results, without too great a sacrifice on the part of the sufferers, must lead to an intelligent appreciation by the laity of the rationale of surgery, and thus stop many from seeking the straw grasped by the drowning man—in this case, the pasteurized charlatan, the downright pretender and the faith-curists, whose pretensions to a special pull with the Deity are a blot on our modern civilization or, rather, ignorance produced by superstition.

SPARING THE TONSILS

When tempted to remove the tonsils—hesitate. Thus are we exhorted by more than one writer on the subject, wherefore one finds himself in a quandary, unable to decide whether or not to perform an operation which others justify.

It is quite often remarked that there is no part of our organism but what serves or was intended to serve a function. Scientifically, though, this is not a sound argument since humans as a race have inherited not one, nor ten, but as a matter of fact scores of rudimentary organs and structures, which served the earlier animal forms from which we have come in the evolutionary cycles. The appendix, the muscles of the ear and the thirteenth rib are among the most familiar examples. May not the tonsils be legitimately classed as rudimentary also and so be dispensed

with no less easily than the large intestine, many feet of which serve us humans no good purpose, if we are to believe Metchnikoff, and Arbuthnot Lane, but instead jeopardize our existence?

Regarding the tonsils in this light, many surgeons remove them wholesale. However, a fairly strong remonstrating voice bids us hold. The tonsils are not pariahs in the human household, says this voice. They are not properly to be classed among the obsolete human organs. They are a part of the endocrine chain and have a function to perform. Some people, it is admitted, may do very well without them, those of normal or hyperactive compensating glands. But, other people may not, do not, and can not support their loss. Not infrequently, it is pointed out, one who has been unwisely deprived of his tonsils will develop an infectious endocarditis or a suppurating appendicitis. In such patients, the septic or infecting elements were not intercepted as they might have been had the tonsils persisted intact at the gateway, denying these injurious elements ingress.

So, there are we—in a quandary. To remove the tonsils or to spare them even though they look ugly and delapidated, that is the question confronting us. And, while enjoined on the one hand not to remove them, the poor surgeon is urged on the other hand to be quick about it, the while hearing that many a person after tonsillectomy lives on in better health or at least as good as before the operation was performed.

Withal, it is no doubt true that the tonsils often trouble in consequence of thyroid dysfunction and in such instances may be remedied by proper non-surgical treatment; also that the tonsils often hypertrophy physiologically, though precisely why and how we may not know. Perhaps, after all, the advice is sound which admonishes the surgeon at all times to hesitate.



Leading Articles

Fatigue*

By W. F. von ZELINSKI, M. D., Major M. C., U. S. A., Camp Meade, Maryland

DEFINITION: "The exhaustion of strength caused by physical toil; languor resulting from continued muscular or mental strain or exertion; weariness, lassitude."

"All the work that man can do that can be rested by one night's sleep is good for him, but fatigue that goes into the next day is always bad." (Stowe, "Oldtown Folks," Quoted in the "New Standard Dictionary.")

Theory

Fatigue is a phenomenon observed among animals in which the vital functions are carried on in an enclosed sac-like structure; it is said to be met with in the vegetable world among certain species of the *Mimosa*, or Sensitive plant, the leaves of which close on being touched.

Something comparable to fatigue may be induced in bacterial and other unicellular organisms. This is done by controlling or limiting the medium in which such organisms ordinarily thrive; under such circumstances, a condition may be brought about in which vitality is attenuated and reproduction arrested. However, the medium may be changed and the former activity restored. It is not the exhaustion of the nutritive medium which arrests activity, but the accumulation of waste products from the organism itself, which, when they have reached a certain degree of concentration in the medium, inhibit activity by producing an effect comparable to what we call fatigue. In nature, the medium in which unicellular organisms thrive is practically unlimited; hence, the degree of concentration of waste products required to produce inhibition is almost unattainable.

In vertebrates, we have the nutritive medium, that is to say, blood and lymph cir-

culating within a closed sac; and we find that we are dealing with a problem of equilibrium, in other words, a balance between nutrition, production of waste, and elimination. Selection and heredity have determined how the correlation between these different elements is maintained under normal conditions. When the balance between these factors is disturbed for any reason, we are confronted with an abnormal condition. To illustrate, if elimination should be, say, less than half of the amount of waste products produced, at the end of a certain time there would be an accumulation of waste which might manifest itself as fatigue. To overcome this condition, the body is forced to rest. By this means, there is induced a limitation of activity, less waste is produced, less nourishment is required, while the process of elimination may continue and little by little the normal balance is restored.

Now, as to the question of fatigue. Two factors in general determine this condition: first, prolonged normal function and, second, intense exercise continued for a short period. If we examine a muscle which has been exercised beyond its normal habit, we will find that it produces an increased amount of waste. This is first eliminated in the immediate vicinity in which the muscle functions, or, to state it more plainly, in the intercellular lymph. The passage of this waste from the lymph into the blood stream goes on at a measured rate. If now the waste accumulates faster than it can be carried away in a given time, it produces fatigue local in nature or extent. This fatigue may be overcome by increasing in various ways the stimulus acting on the muscle. There is, however, a limit beyond which the muscle ceases to react. In

*Read at the Annual Meeting (1921) of the Illinois State Academy of Science, at Carbondale, Illinois.

man, one of the means of stimulating a fatigued muscle is, by action of the voluntary nervous system. As the degree of fatigue increases, so must the will intravene more and more energetically until the nervous system itself becomes fatigued, after which impulsion becomes less and less powerful and the muscle ceases to function. What has been said of muscle applies to all other tissue, to the glands and the nervous system. The latter appears the least exhaustible of any tissue is the last to be affected, manifests itself to a less marked degree and is capable of reacting most powerfully. Even during sleep, the brain appears able to maintain a certain activity as in dreaming.

Classification

As in most scientific subjects, classification is difficult. A slight modification of Tissie's classification is here adopted and, though imperfect, may be of some assistance in simplifying our study.

1.—Lassitude. This is generally the result of normal physiological labor and is readily overcome by rest. It may also be overcome by proper training, so-called getting "Form," which gradually and progressively pushes back the threshold of fatigue and permits work beyond the previous normal but without producing ill effects.

2.—Acute exhaustion. Here the threshold of fatigue has been passed, inhibition becomes general, functional activity is limited and there is muscular relaxation and palpitation of the heart from lowered blood pressure. Prolonged rest is required to overcome this condition.

3.—Chronic exhaustion or overwork. This is the result of repeated acute exhaustion. In addition to simple inhibition, there may also be loss of tissue, symptoms of pain, nervous irritability, headache, sleeplessness, loss of appetite, slowing of the heartbeat, accompanied usually by increased blood pressure, and various nervous symptoms. The origin of this condition may be muscular, visceral or nervous. The latter, without being the sole cause, nevertheless dominates in children and adolescents. In sports, muscular overwork is an important contributing but not exclusive factor. During the war, we witnessed many examples of overwork provoked less perhaps by physical efforts than by the emotions.

4.—Overstrain. This is practically an extreme acute exhaustion; it often follows a

severe injury and borders on, if indeed it does not represent, what we know as surgical shock. The condition is sometimes fatal by inhibition of the heart action. Usually, one observes in such cases phenomena that have all the marks of a profound intoxication, with disturbance of the internal organs and psychic manifestations.

The Fatigue Factor in Epidemics

Adami says, "A condition that of late years has come in for not a little study, either as directly causing morbid states or as rendering the organism more susceptible to disease, is that of overwork and fatigue." Time and circumstances do not permit my dwelling at any great length on some personal ideas in regard to the effect of fatigue as a contributing factor to the fearful epidemic of the so-called "Spanish Flu," but I am of the opinion that a careful analysis of all the factors will show that fatigue played an enormous role. Some personal experiences will perhaps indicate the trend of my thoughts along these lines. In the early months of 1918, I was on duty in one of the Southern Training Camps. During that time, there occurred a severe epidemic of measles together with a goodly number of cases of meningitis and diphtheria. The command with which I was serving was located in the center of the camp. Intensive training was being carried on except in our organization, which worked on a separate schedule; however, in sanitary matters, we were all under the same regulations. At no time during this epidemic did our non-effective rate ever approach that of the surrounding organizations. During one period of the epidemic, the amount and intensity of the training was curtailed, and this seemed to have an appreciable effect in lessening the general sick-rate. I do not mean to infer that exact relations between these factors were clearly defined; for, other measures were also taken, such as increasing the amount of floor space per man, issuing clothing and bedding more suitable to the existing climatic conditions (exposure or chilling is an important cause of fatigue). Still, while no doubt all these procedures were of value, I cannot escape the conclusion that those measures which served to combat the element of fatigue were of the greatest importance and accomplished most in bringing up the resistance of the individual. As noted before, our own organization was but slightly affected at any

time; consequently, its training schedule was not changed or altered, nor did the adoption of the other measures spoken of have any appreciable effect on our sick-rate, the greater number of cases being of non-epidemic nature.

The question may be asked, were the men really exercised or trained to the point of fatigue? This is a debatable question, since the factor of the play on the emotions has to be taken into consideration, and, certainly, those who participated in war activities will agree that the times were "nerve-racking." However, I believe myself justified in saying that most of the men at some time in their military service, particularly in their training period, were in a state of fatigue. I make this assertion on the basis of many physical examinations made both by myself and in the supervision of work along these lines done by others. Among the most important symptoms of this condition, were the heart findings. The greater number of men complained of pain in the region of the heart; there was palpitation, difficulty in breathing, undefined fear, sometimes coming on after exercise or coming on spontaneously; the nerve reflexes were greatly exaggerated.

Fatigue and the "Soldier's Heart"

Those who interested themselves in the literature of the medical aspects of military training will recall the great number of articles concerning "The Soldier's Heart." The well-known heart specialist, Sir James Mackenzie, stated: "Neither Alcohol nor Tobacco can be shown to have much influence on this condition. . . . In very few can a definite physical effort be blamed for the onset of symptoms, but the prolonged and unaccustomed exertions of training seem to play a part;" again, "'Soldier's Heart' is an evidence of general exhaustion, the circulatory symptoms being but part of the general manifestation." Summing up some conclusions along the same lines, Dr. Carey Coombs remarks: "The process of military exhaustion digs much deeper into the soldier's being than would appear at first sight. With the best will in the world, men exposed constantly to danger, loss of sleep, unwonted physical exertion, and dreary surroundings, can not help wearing out."

In the fall of 1918, we were in France as part of a brigade the component regiments of which were stationed in adjoining areas; it was at this time that we had our first ex-

perience with epidemical influenza. For some unaccountable reason, the other regiments were more severely affected than our own, which was a source of perplexity to the sanitary inspectors, since we were all following out the same regulations. Here, as in the States, I was, and am still, of the opinion that the element of fatigue was a deciding factor. I know that the other organizations were more heavily encumbered than our own, which necessitated a great deal of labor to which we were not subjected. What the morale of the other troops was, I am unable to say, but that of our own was very good. What with untoward climatic conditions, dreary surroundings and difficult living conditions, it was my constant aim amongst other things to guard against general fatigue, as it was my belief that the men were then at their maximum of form for carrying on with their assigned duties. We were very fortunate not to have lost a soldier through the influenza, and at no time were we so badly affected as to have to cease our regular activities. Apropos to this is the following extract from a letter written by the, then, commanding officer: "The 8th Field Artillery maintained a very remarkable health record during very trying conditions in the fall of 1918."

Some time in January of 1919, a second epidemic of influenza occurred. Conditions had changed and were decidedly unfavorable. The Armistice had been declared and, though the tension incident to keeping fit for combat was now removed, there was a reaction in which confidence, enthusiasm and zeal were apparently at a low ebb. There was in addition an increased physical labor required incident to a troop movement, and a change for the worse in the weather. The appended letter will indicate to some extent some of the conditions we had to overcome. [See Appendix.—Ed.]

Decided efforts were made to remedy the conditions complained of in the letter. However, we were not so fortunate as in the previous epidemic. In addition to having a large number of sick, a small proportion were affected fatally.

Conclusions

It has undoubtedly occurred to everyone at all interested in preventive medicine that, in contagious diseases, some element aside from infection must play an important part. I believe that fatigue of whatever nature is an important if not the most impor-

tant predisposing cause. It is reasonable to assume that fatigue, using the term in its broadest sense, produces certain changes in the body which permit infectious organisms to thrive therein and produce their deleterious effects. It is my opinion that exhaustion and fatigue are stages of what we call surgical shock. Finally, admitting that athletic and military training is carried on at present along fairly scientific lines, it appears to me that much more may be discovered and, with the present possibilities in the study of basal metabolism, that experiments should be carried on to determine the maximum of physical efforts possible for the average individual without producing fatigue, the kind and amount of exercise required to extend the threshold of fatigue until an optimum of form is reached; and, last but not least, to what extent does fatigue and exhaustion predispose to infection of any kind.

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The Appendix referred to in the text follows below:

Regimental Infirmary, 8th Field Artillery
 A. P. O. No. 779.
 January 21st, 1919.
 From: The Surgeon, 8th Field Artillery.
 To: The Commanding Officer, 8th Field Artillery.
 Subject: Preservation of the Health of the Command.

1. The sick call and rate of disease incidence in the regiment is increasing and, though our record is but little more than the usual normal percentage, it is sufficient to warrant an increased endeavor to control every possible factor which may be involved in this increased rate.

2. Most of the factors which have to do with spreading disease from man to man are fairly well controlled. There is, however, the element of fatigue which this officer has investigated and which is believed to be

serious and one of the important causes in breaking down the individual resistance which, in the presence of an epidemic of the various prevalent diseases, could cause serious consequences.

3. The apparent cause of fatigue in the regiment is not so much due to the drill or work but seems to be due to a lack of facilities in the way of heat and light to allow for recreative relaxation. There is also evidence, on this account, of lack of sleep and worry. The men are expending much of their energy in an endeavor to keep comfortably warm, since this does not seem possible in a state of rest. The heating facilities in the barracks are so limited that an excessive number of men huddle about the one or two stoves in these barracks which may happen to have a fire. Those who can not get near, are constantly on the move or go to the Y. M. C. A. the facilities of which are not nearly adequate for the number of men who pile in or who wish to get in, in hope of getting rid of the physical discomforts incident to their fatigue and the nuisance of having to be bundled up in every available article of clothing at hand. Under the above-mentioned circumstances, there is little hope of checking crowding, the true cause of which lies in the imperfect conditions surrounding the men. These conditions cause fatigue and mental depression with its consequent bad effect on bodily resistance and morale.

4. In this investigation, this officer has personally practiced the mode of living of the enlisted men before coming to any conclusion. It may be remarked in passing that the non-effective of officers is not nearly in proportion to that of the men, as must be apparent to any one, for the reason that their facilities for physical comfort and personal care are so much better.

5. It is suggested that every possible effort be made for providing recreation rooms for the men where they may relax in comfort. It is believed that, if each battery will provide a warm place where men may gather without crowding, as in the mess halls, and if stoves and sufficient fuel be provided for heating for a period between retreat and taps * * * The serving of hot drinks, such as bouillon or chocolate could also be considered as adding to the well-being and comfort of the men. It is further suggested that the stoves in the barracks be furnished with fuel at least sufficient to drive the moisture out of the building or to permit men to get comfortably warm without crowding around the stoves.

W. F. von Zelinski,
 Major, Medical Corps.



A Study of Normal Labor

With Suggestions as to Its Mechanics and a Method for Its Conduct
A Preliminary Report

By HUGH J. SAVAGE, M. D., Corning, Ohio

EDITORIAL COMMENT.—Term, that is, the exact time when pregnancy terminates naturally, is a period that many times is beyond our ability to determine. Normally, it occurs exactly ten lunar months after the date of the last period. If pregnancy is protracted, it appears well to induce labor. Whether the deliberate induction of labor, as suggested by Doctor Savage, is wise in ordinary cases, we should like our readers to determine. Doctor Savage's argument appears to us to be sound. What do you say?

IT is obligatory upon every graduate of medicine that he be conversant with the principles which govern the management of a case of labor. Every physician is popularly supposed to have acquired the technic and to possess the skill necessary to meet any and all emergencies to be encountered in the successful management of parturition. It behooves us, therefore, as practitioners to procure the knowledge necessary to differentiate the normal from the abnormal, and to enable us to correct the lesser abnormalities. It has been my lot to have conducted many cases since my début in the field of obstetrics, and to have approached many with a feeling of mistrust in my ability to make the necessary diagnosis as to the stage of labor and the position and presentation of the fetus.

A rapid termination of the three stages is a blessing devoutly to be wished by both the mother and the accoucheur; but, the desire for haste should never jeopardize the element of safety. I am now of the opinion that, in my earlier career, I rushed to the resort to forceps and version when no such course was indicated, merely because the cries of a hysterical mother, the panic of attendants, and the dreadful "do nothing" policy of "watchful waiting" so intensified the suspense of my position, that I hastened to silence the mother with chloroform and terminate her suffering with the forceps. Nature was kind and considerate, and I emerged from my period of probation and soon developed poise, judgment, and observation. Thus there came a better understanding of the mechanics involved which, in turn, suggested new methods.

In the past year, I have discarded pitui-

tary substance, as being an uncertain and dangerously ally previous to the second stage. I have injected the drug at times when the presenting part appeared to be well engaged, and have felt the head spring upward into the uterus allowing the cervix to contract, under this stimulation, a seeming retrogression of the labor; whereupon an otherwise normal case became abnormal, entailing quite a little difficulty in delivery. Therefore, I now use pituitary substance as a routine measure only following completion of the third stage, to stimulate afterpains and to act as a prophylactic against postpartum hemorrhages.

Induction of Normal Labor at Term

In a series of forty-three cases in which I have used the method to be described herein, I have not lost a mother or a child, either at the time of delivery, or at any time within the lying-in period; nor have I delivered a still-born infant. I argue from this that the method is safe enough to be used by the general practitioner in the conduct of the average case of labor. I am fully aware that the induction of premature labor has been employed for years; still, its application to normal labor at term is, I believe, new. I expect criticism from the advocates of non-interference. However, in forty-three cases I have delivered forty-three sound, healthy babies by the method, having confined some of the women the second time. All have expressed a desire to be delivered in this manner and asserted that they have suffered less pain and were less fatigued than on former occasions. I recommend no instruments nor do I use any. Bags and dilators are ignored as being slow, troublesome, and

nearly as slow as nature herself. With this brief foreword I shall proceed to a survey of the causes of labor.

The Causes of Labor

Labor is that natural mechanical process by which a female expels the product of conception from her uterus and vagina at term; it occurs two hundred and eighty days from the first day of the last menstruation, or upon the tenth menstrual period since pregnancy began.

Menstruation having become regularly established in the young girl, a cycle is created, the constant repetition of which produces a subconscious tissue-memory, or habit (heredity) which is periodically recognized by the tissues in a disposition to muscular action. This recognition occurs every twenty-eight days during the entire sexual life of the woman, and is potential, existing at the same point in each cycle at which point menstruation occurs in the non-pregnant uterus. In the pregnant uterus, the potential factor is not lost but is present at the normal cycle point, wherefore any exaggeration of this disposition results in miscarriage or abortion until the tenth cycle point, when labor occurs. Putting this in another way: There is nothing haphazard in the occurrence of miscarriage, abortion, labor or menstruation in the normal woman. Labor is initiated upon the same day upon which the female would have menstruated, had she not been pregnant. This is also true of miscarriage. Care should, therefore, be taken at this time, more than any other, to protect the mother. Beside the disposition just mentioned, a second factor is needed, and may occur as an accumulation of menstrual blood, abnormal secretions or uterus content, in order to convert this potential into kinetic force. This cause of labor is called *Periodicity*.

Hollow muscles in the body admit of distention to a certain point, which having been reached the muscle is stimulated to contraction to expel the contents of the cavity. Evidence of this fact is to be found in the stomach, intestine, rectum, bladder, and heart. The stomach and intestines normally contain gas without producing any discomfort. A continual increase in the volume, producing distention

beyond a certain point, gives rise to no pain until contractions of the intestinal and gastric walls have begun, when colic ensues due to the effort of the gastrointestinal tract to expel the contents. Again, distention of the heart chambers with blood beyond a certain point causes contraction of the musculature and expulsion of the blood into the arteries. In like manner, the uterus admits of distention to a certain point, whereupon any extra distention stimulates it to contraction thereby expelling the fetus. This cause of labor is called *Overdistention*.

In considering the uterus as a hollow muscular organ, we are considering one cavity within another namely, the abdomen. Just as the uterus bears distention but reacts to overdistention, so the abdomen also reacts and, in fact, is first to do so. The contraction of the abdominal muscles reduces the capacity of the intra-abdominal space driving the uterus downward, the lower segment passing through the superior strait into the pelvic cavity. This occurs about the thirty-second to thirty-sixth week, and may be rapid or gradual. The mother then experiences more discomfort in the lower abdomen, in the vagina, rectum, bladder, hips and thighs, and less in the upper abdomen. So constant is this phenomenon in pregnancy that, should it fail to occur, some cause of its failure should be looked for. The cause is usually found in either a malposition of the fetus or a deformity of the pelvis. Should the failure be due to a malposition of the fetus, a correction by manipulation through the abdominal wall may be performed a week before term and the fetus maintained in position by pads applied to the abdominal wall, whereupon an otherwise abnormal labor will have been changed to a normal one. Manipulation will sometimes initiate labor pains. I therefore advise waiting until the last week of pregnancy to correct the condition. Should the position be found to be normal and the uterus not settled, it is advisable to resort to the pelvimeter.

To summarize: The disposition to muscular action, or Periodicity, exaggerated by Overdistention, stimulates the uterine muscle to contraction and, the lower uterine segment having passed through the superior strait, the presenting part is then low in

the vaginal vault and normal labor occurs. Miscarriage is more prone to occur and in the great majority of cases does occur at that point of the cycle on which the woman would have menstruated. Secondly, should a girl fail to menstruate for a period, by reason of sickness, anemia or from other causes, it will be found that, when that function is resumed, it will occur, on being well established again, within its normal cycle. This is just as certain as the fact that the moon, being invisible for a period, will be found rising and setting, when again visible, according to its old schedule.

Signs of Approaching Labor

Labor develops in a manner very similar to the coming of a storm. The mother gradually becomes more and more conscious of slight discomforts in the lower abdomen, which are more apparent proportionally as she approaches the influence of the tenth periodicity point, at which time she becomes acutely conscious of the sharp, ineffectual, nagging pains indicative of "false" labor. These pains last a variable length of time and are the precursors of the true pains of labor. If the physician has carefully watched his patient, if he has informed himself in advance as to the settling of the uterus and has accurately determined the points in the menstrual cycle, there is no reason on earth why he should have any doubt as to the outcome, nor is there any reason why he should permit a case to go beyond his ability to manage it.

Labor Initiated at Will

Assuming that the time has expired and that the mother is conscious of regular, characteristic pains of labor, whether true or false, she may now be prepared for delivery. Absolute cleanliness amounting to surgical asepsis is necessary. The mother should be placed in the bed with the knees drawn up, the perineum scrubbed and shaved and properly isolated with sterile towels. The vagina is made aseptic by tincture of green soap, hot water and pledgets of cotton, followed by an antiseptic douche. The operator then prepares himself as if for a surgical procedure, and is then ready to conduct the case.

The obstetrician now passes two fingers of his right or left hand into the vagina, inserting one or, if possible, two fingers

into the cervical canal and making slight traction upward, spreading the fingers to dilate the canal. This is continued until a third and fourth finger can be inserted. The abdomen is now grasped with the free hand and pressed down upon the fundus, bringing the presenting part down to engage, while the fingers in the vagina are kept in position. During this procedure, the mother is conscious of the contraction but feels little pain. The operator will now employ traction on the cervical canal for one minute, and allow a minute's rest. When the head is well engaged and the cervix is well dilated, pressure being still exerted on the fundus, an effort is gently made to push the lip of the cervix over the head. Should the cervix remain firm and resist at this point, 1-150 grain of atropine is given by mouth and, after waiting five to ten minutes, another effort is made; with both hands in position, which is usually successful.

The uterus contracts in a sort of a peristaltic wave beginning at the cervix, running up over the fundus and returning again to the cervix. It would therefore seem that the cervix is the logical place to begin mechanical labor. Nature does this very thing in forcing down the presenting part; but, as the actuating force is (to a great extent) gravity, the resulting natural labor is very slow. The only practical difference, therefore, is a difference in leverage.

The patient should not be asked to bear down at this stage, as the presenting part is acting simply as a wedge to take up the dilatation, while not descending to any appreciable extent. The muscles of the abdomen are therefore useless and would simply act to delay the labor. The main obstruction to the descent of the child (the cervix) being removed, the head drops into the vaginal vault, allowing the abdominal muscles to act effectively in displacing the fetal body downward. The contraction of the abdominal muscles causes the first sharp pain, so that, at this stage, a little chloroform may be given if desired.

Should the physician wish to stop the pains, for any reason, before the head has passed the cervix, he has only to cease his efforts, whereupon the fetus will withdraw into the uterus and the cervix will

contract, after which normal labor pains at long intervals will occur.

I am firmly convinced that this method can be used successfully under light anesthesia, to rival twilight-sleep, while possessing none of its disadvantages. I have

used anesthesia in two cases, with results which encourage me to write this paper. I hope at some later time to be able to report a series of cases of painless labor, and expect to maintain my present mortality rate, namely, nil.

Narcotic-Drug Addiction; Its Cure

By JOHN J. A. O'REILLY, M. D., Brooklyn, New York

EDITORIAL COMMENT.—Doctor O'Reilly has put his splendid and instructive discussion of the narcotic drug problem, especially the effects of the drugs upon the body and the best means to be relieved of the disease, into popular form. It is a good way, we believe. It reads easily; it impresses its lesson upon our minds without much brain work; it is in a form that we may utilize in instructing our patients. Doctor O'Reilly's plan of treatment appeals to us. We should like to see it put in practice and to receive reports from our friends regarding the outcome. This, we feel assured, will be excellent.

AN artilleryman who saw much service in France told me that was amused at the sight of war-worn infantrymen returning from the trenches for rest, standing with hands clapped to their ears when the big guns were about to be fired; yet, these men had a familiarity amounting to contempt for the shells those guns would fire, and had "done their bit" without a trace of fear while enemy shells were dealing death and destruction all about them. Why? Because their psychology and ours makes us contemptuous of the dangers we know and fearsome of the unknown. When the mechanical accuracy of gun control was made clear to the infantrymen, they became interested rather than afraid of the work of their brothers in the artillery.

Is there not something of this same psychology in the plight of the unfortunate drug addict? Is it not probable, if we instruct him in the causes which produce the symptomatic effects of pain and difficult breathing and sweating and bodily and mental depression, that strike terror to his heart and impel him to seek surcease by recourse to the stimulation of his drug, that this knowledge will give him fortitude to suffer these explainable discomforts, and patience and courage to apply the remedy himself or, at least, cooperate with others that he may so restore the chemistry of his body as to make resort to a drug unnecessary and undesired?

The vicious addict will neither read nor apply the suggestions contained in this article; him, the Law should apprehend as

an enemy to society and it should force him to submit to their application: * * * The unfortunate one who has become a victim through ignorance of the danger of the quack nostrums of years ago, or by reason of carelessness or indifference in his choice of companions, or one whose vitality has become depreciated through overwork or overindulgence and who hates his wretched state and would escape from it if he could; these will surely be willing to read this and enlist the aid of the family or family physician or both, and win through clear of this horrible curse which saps the mental, moral and physical strength and tends to make its victim a "thing" rather than a "man." This is not a "Cure" as the word is loosely used; the remedies which will be suggested are as familiar to the lay person as is the food which appears on his table; the purpose of the use of each of them will be explained and the reader's reason will see the logic of their operation. The only price that must be paid is, willingness to suffer some discomfort for a short time; but, even that discomfort will be minimized without the use of a single medicine which has relationship with the family of narcotics.

Let us take the commonest narcotic used by the addict, according to the reports of the investigators—Heroin. In small doses, this is a narcotic; it relieves pain, allays cough and induces sleep if given in small quantities. But, when taken in large quantities, these sedative qualities are subordinated to a stimulating effect which has the same influence on the physical body of

a man that a whip has on a tired horse; it makes him hustle, but only for a little while. When he lags again, he must be whipped again; and so on until he neither will nor can do his work without the whip. Even this whipped horse, if transferred to an owner who applies work, play and sleep in decent proportions, will become a useful animal. And, so may the addict.

There are three states of every tissue in your body; tone, stimulation, exhaustion. Take the baseball pitcher as an example. By judicious training, he develops the force and control of his arm and, with the assistance of normal, reasonable and natural stimulation, he pitches a good game. But, if he submits that arm to abnormal, unreasonable, unnatural stimulation, he gets what is known as a "glass arm." He is out of the running and useless as a pitcher. That is precisely what the use of the narcotic does to the addict; it overstimulates him, keeps him at tension and, when the drug exhausts itself, it also exhausts the addict. During that short period of stimulation, however, he has wasted the energy and the substance of every tissue of his body; his nerve tissue is depleted and unable to control motions; he has tremors; his muscle tissue is incapacitated and he is not only weak, physically, but the muscles themselves are loaded down with "dead meat" worn out by overuse. This is as true of the muscle of his heart as it is of the muscles of his legs; therefore, to do its work, the heart must beat rapidly instead of forcefully and, when this happens, his breathing will be correspondingly shallow and rapid. In the wearing out of his tissues, by this overstimulation, the blood, upon which the whole body depends for activity, can not expect to escape and the destruction of the cells of the blood leaves him anemic, pale and washy. Now, watch how the symptoms, which terrorize the addict, begin to show themselves.

Relieving Symptoms of Addiction

Yawning. The red cells of the blood are the oxygen-carriers. Because they are actually reduced in strength and numbers, the total power of oxidation is diminished and nature tries, by means of the distressful and unsatisfactory yawning, to take in an extra supply of oxygen from the air so that the few red cells which are left may get their supply. Unfortunately, the muscles of

the chest, which should complete the act of yawning, are themselves overstimulated and exhausted and fail to help the addict when he needs them most; this is one of the reasons why outdoor life is valuable in the treatment of addiction, to make plentiful the oxygen-intake.

Sweating. Carbon-monoxide (illuminating gas) is a stimulant to the sweat glands and, because the oxidizing power of the body is reduced, the blood current is loaded down with carbon-monoxide. Therefore, since body-cleanliness helps the surface blood-vessels to take up oxygen from the air, frequent tepid or warm baths and brisk rubbing are a simple help in reducing this form of body intoxication.

Pain. Because the overstimulation actually wears out and destroys the tissues of the body, there is a lot of "dead meat" to be burned up, or oxidized, and carried out of the body; the poor, tired, exhausted red blood cells try to do their best with this mass of waste but only succeed in getting rid of a little. The great bulk of this waste can only be oxidized to the point of salt-formation and those salts are deposited in the sheaths of muscles and nerves in joints, and so forth. They are just as much foreign substances as is a splinter under a nail. Of course, the addict has pain and that pain is excruciating. But, if he will stop and consider that those pains are really only the same kind of pains that his rheumatic neighbor has to suffer, day after day, his fear of them will be modified and his determination to bear them, rather than resort to his drug will be strengthened. Then his own common sense will suggest that, the more water he drinks, the more likelihood will there be that those salts will be held in solution until nature can find time and energy to remove them from the body altogether. If he will learn that vegetable soup is one of the best solvents for those salts that we have been able to find (and a good food as well), he will be able to help still further the work of changing his body chemistry toward normal and accelerate his relief from the slavery of drugs.

Constipation and Diarrhea. These seem to be contradictory symptoms, but one or the other exists in every addict and each plays its part in still further embarrassing an exhausted blood supply; for, the unfortunate blood in trying to get rid of the foul material in the lower bowel is bound

to absorb some of the poisons that are manufactured there. One of the most distressing effects of narcotic drugs, whether they are used in small or large doses, is to dry up the secretions of the digestive apparatus. Of course, this means failure of proper digestion and, of course, too, it means a decrease in the amount of nourishment and an increase in the amount of waste derived from the food. This increased food-waste either packs the large bowel with hard, almost immovable masses, or else so irritates the intestine that a catarrh results and the effect is seen as a diarrhea. Do not place your faith in drastic cathartics. Take a teaspoonful of plain phosphate of soda in hot water before your morning and evening meals, for a week or so, and then take it only before your breakfast. Then, for that "or so," take a 3-grain cascara sagrada tablet (or a teaspoonful of the aromatic fluid-extract of cascara) at 10 o'clock in the morning and at bedtime, decreasing this (after the week or so) to the dose at 10 a. m., or, say, two hours after you take your before-breakfast phosphate of soda. When your bowels move more than twice in the day, cut down that cascara to every other day but keep the phosphate of soda going strong. Surely, this is not difficult and your common sense will tell you that you are removing one source of embarrassment from your blood supply and giving it the semblance of a "square deal." Then, if you want to help nature in her work of restoration during sleeping time, take a rectal enema of four (4) teaspoonfuls of common table salt in two (2) quarts of warm water shortly before bedtime and you will be sure of a clean bowel.

Wakefulness. The only sleep you will get from the use of the drug is the sleep of exhaustion which never did anybody good. Take some hot food at bedtime, a little gruel or hot milk or hot (thin) chocolate and a piece of bread and butter; give your stomach something to do and it will call the blood away from the brain where it is busy keeping you awake. Then take a leaf out of Grandma's book; she knew that, if water is drawn in the basement of a house, it can not be had on the top floor and, when you showed symptoms of a cold, as a boy, she gave you a hot mustard foot-bath. Do it now and the blood that reddens your feet can not be in

your brain to keep you awake. Then use the breathing machinery God gave you and take twenty or thirty long deep breaths, even though it be an effort, and drive the blood to the surface of your body and away from the brain. These simple measures will do more to insure a refreshing sleep than all the narcotics in the world. Be sure you leave your windows wide open and put enough bed clothes over you to keep your body warm.

Food. You and I know that you haven't much appetite and that ordinary food does not "set well" on your stomach even if you try to eat as a matter of necessity. Well, drink milk and, for a little while, pour off the top half of a quart bottle (that means the cream layer and some of the light milk so as to make the top sixteen ounces in all) and take this in wine-glass doses frequently; take vegetable soup, a cup at a time, three or four times a day; a cup or two of mutton broth (from the neck); vegetable salads with olive oil, some good, old-fashioned gruel with a little nutmeg or vanilla (or both) to flavor it; a tablespoonful or two of juice from the top-round of steak just scalded on the broiler and squeezed; some bread and butter (no toast); ice cream, grape-fruit or orange juice (not the fiber); apples and pears (throw away the skins); a little fat bacon (not crisped). If you take these things, you will have enough food and to spare, no matter how big a frame you have to nourish.

Medicines. Ask your family doctor if he does not think a small dose of strychnine (1/40 or 1/60 gr.), four times a day, will afford you all the body-stimulation you need and, as well, add tone to the muscle of your heart, your digestive apparatus and your body muscles, generally, and if it will not also increase the depth of your respirations and increase your oxygen-intake. Further, he will tell you that, in addition it will put a little character in your nerve tissue. He may order a small dose of the bromide of arsenic (1/60 gr.) in the same capsule, four times a day, as this also will help to increase the depth of respiration (and body-oxygenation) and produce an increase in the actual number of red cells (oxygen-carriers) in your blood. Then ask your doctor if the addition of a couple of grains of salicin will help to lessen the rheumatoid pains which bother you; and ask him, too,

if the addition of a small dose of the bisulphate of quinine, or cincholoids, ($\frac{1}{2}$ gr.) will help to put an edge on your appetite and lend a little tone to your digestive apparatus. All these things can be put in capsule form and taken four times a day. Not any of these things are habit-forming drugs.

Confidence. Now, what is hard about this proposition? If you really want to master your addiction, here is a simple plan which, if honestly followed, will change your body-chemistry in spite of you and bring you to such a state that, after a week or two, if you dare to experiment with the drug, it will have the effect of a poison and make you acutely sick. But, for those two weeks, *Pay the Price Like a Man* and suffer some of the ills of your condition with fortitude. If you had a broken leg, you

would not be afraid or ashamed to call your family and your family physician to your aid; then, why not do so now in this more serious illness? If you fear that your own will is not strong enough to insure a fair trial of this plan, go into a sanatorium where your own doctor can watch over you and see that you do not get the drug. You know that the problem has become a serious social one and it will not be long before you will have to make yourself a subject of public record in order to get this drug which is destroying you. Do not four-flush by seeking the "gradual reduction" method and do not use the "gradual reduction" method in conjunction with this plan; for, it will be an insult to your intelligence and to mine. Give it a chance and give yourself a chance to win through. It can not harm you and it may save you.

Morphine in Neurologic and Psychiatric Practice*

By PROF. ALEXANDER PILCZ, M. D., Vienna, Austria

THERE is sometimes opportunity to see morphine given in nervous and psychic affections, when, at best, it does not help the patient; even at times does downright harm.

We must always keep the fact in mind that opium and its derivatives have a specific anodyne effect but are quite ineffective against psychomotor excitement and particularly against spasmodic conditions, in the ordinary doses; also that they contain a constipating component as well as a pain-subduing element. These elementary attributes are often too little regarded in ordinary practice.

When Morphine Is Useless

We see, for instance, that morphine injections are administered in attacks of cumulative epilepsy, whether genuine or in paralytics. Here, this drug is not only not indicated but is directly contraindicated. It is quite unable to combat the spasmodic attacks and also runs contrary to one of the chief considerations in the treatment of status epilepticus, by its secondary effect of

constipation and reduction of secretion, namely that of the most speedy and thorough elimination possible, from the organism, of autointoxication products, which are the most important causes of epileptic explosions.

We have at command more effective drugs to combat these attacks, in amylenhydrate, neuronal, and luminal, and possibly lumbar injections; while, for energetic purging of the bowels, there are enemas of saline solution available.

Morphine is also useless, though perhaps not downright injurious, in the combating of excitement in the mentally affected; therefore, in maniacs, for instance. Where packing, continuous baths, and other hydro-pathic measures do not have the desired effect or are impossible to administer, and where it is a question of speedily subduing a violent condition of excitement for the purpose of transportation, hyoscine is suitable, or else scopolamine, in doses of from 0.0005 to 0.001 Gm. (1/128 to 1/64 gr.).

Morphine must further be mentioned as absolutely contraindicated in conditions of excitement of the so-called delirium acutum

*Translated into English by B. Lewis, M. D., Vienna, Austria.

and of delirium tremens. In both conditions, energetic combating of coprostasis is one of the most important tasks; therefore, just the contrary of what morphine produces, apart from the fact that it is completely ineffective against the psychomotor excitement and absolute sleeplessness of these patients. It is not accidental but is explained by the manner of treatment, that the mortality of this psychosis fluctuates between 10 and 35 percent in the clinics where opium and chloral are recommended and where the employment of alcohol as excitant in delirium tremens is considered unnecessary. At our clinic, the mortality is 3.63 percent in cases complicated by somatic affections, and 0.9 percent in cases without complications. In delirium tremens, our rules are—alcohol as a specific excitant in case of symptoms of heart weakness, *no* hypnotic and thorough evacuation of the intestinal tract.

Indications for Opiates

Essential sleeplessness, not caused by pain or terror, offers no indication for morphine. In these cases, the numerous actual hypnotics ending in -al, -on, -in, are suitable. Solely in cases of pain and terror, is opium indicated and sovereign in effects. In these cases, the actual hypnotics and sedatives fail utterly. At times, though, in such cases, both morphine and a sleeping dose will have to be finally combined in order to avoid the constipating effect of the former. The Wagner school always combines opium with a laxative; for instance, extract of opium and powdered rhubarb root in pills.

The following is a much more delicate matter. The fear, so fully justified and based on numerous experiences, of exposing the patient to the danger of morphinism by administering morphine, now and then leads conscientious practitioners to condemn this remedy altogether, even in cases where one can not dismiss the thought that the strict avoidance of this solely effective anodyne substance entails needless torture upon the patient. Of course, I do not discuss here the much disputed question of euthanasia at all. In cases of spinal cancers with compression of the nerve roots, however, in severe tabic crises, and the like, many a physician ought to resort sooner to the hypodermic syringe.

When to Fear Inducing Morphinism

Even as not every young man who now and then likes a drop becomes a drunkard, so not everyone who has been given morphine now and then becomes a morphinist. One must be "born" to it to become a morphinist; that is to say, it depends on a peculiar pathological disposition. We know a sufficient number of sufferers from tabes who were given morphine for weeks and who kept from morphine without further ado when the phase of piercing pains or of the crises had passed. True, we can not tell in advance whether or not the individual concerned is one of those peculiarly disposed, but we always have certain marks to go by, and the family physician, who knows the whole family, has many more.

With a neuropathic or a hysterical patient, morphine should really be only the last resort. The after-, or accompanying effects of the first morphine dose bring an immediate response. The person, whom morphine relieves of the pain, but in whom it, at the same time, causes headache and slight nausea, is normally disposed and need not fear the poison; but he who, besides its anodyne effect, feels a particular pleasure, about comparable to that following a glass of good champagne, is the future morphinist—that is to say, he may become an addict.

Without a compelling reason, the physician ought not to administer morphine subcutaneously forthwith, but rather give it by mouth at first. The patient should not know what he is getting. It must be condemned as a serious mistake to give hypodermic syringe and morphine tablets into a patient's own hands.

However, if all these conditions are complied with, if the family and personal peculiarities are fully considered, many a physician might, according to my experience, be a little bit more courageous with respect to the administering of morphine where everything else has failed to alleviate the terrible pains of his patient.

It should be added, in conclusion, that subcutaneous injections of any kind should always be made either in the abdomen or in the back and not in the arms or legs. According to experience, the former spots are much less inclined to infiltrations.

My Twenty Favorite Drugs

II.—Mercury

By WILLIAM RITTENHOUSE, M. D., Chicago, Illinois

TO select the twenty most useful drugs, is not as simple as it appears at first sight. What standard shall one judge by? If one is in the habit of using certain formulas, should one discuss a formula as a whole or should one include in the twenty all the drugs it contains, or only the chief ones? Should the list include anesthetics and antiseptics? Should frequency of use be the only standard or should it be importance of results, even though infrequently needed? For example, nothing could be more important than saving the life of a mother in puerperal eclampsia; my sheet anchor in such a case is *veratrum viride*; and, yet, the need for it so seldom arises that I may go for years without using it, because, when I have the patient under observation during her pregnancy, I do not let her get into a condition where she is in danger of having eclampsia.

Some other remedies are of such a nature that we find almost daily use for them; they give results satisfactory to both the doctor and patient, yet not spectacular.

I shall not tie myself down to any rigid rule, but shall select mainly from those drugs which are administered internally for therapeutic purposes. Of course, anesthetics and antiseptics are of tremendous importance; their discovery and application constitute two of the great revolutions in the history of modern medicine; but they, and the use of serums, vaccines and antitoxins, stand upon a somewhat different footing from quinine, or acetanilid or bismuth. They approach more nearly the classification of surgical adjuvants.

Mercury

Perhaps no other drug has been so much lauded and so much execrated as mercury. Those sectarians who reject all drugs of mineral origin, as well as those who condemn the use of all drugs whatsoever, never tire of relating highly colored stories of the terrible effects upon the human body of this virulent mineral "poison"! The literature of this class, often illustrated with gruesome pictures of the supposed destructive effects of the drug, has

been widely circulated among the ignorant. Of course, the public does not know that those same gruesome pictures represent the ravages of a certain disease for which the mercury was administered, and which would not have appeared had the drug been given soon enough.

These same sectarians delight in misusing the word "poison." They either do not know or else wilfully conceal the true meaning of the word. Poison is a matter of dose. Most drugs will act as poisons if given in excessive doses. There are no absolute poisons; even the most powerful, if given in sufficiently minute doses, may produce therapeutic effects. There is probably no poison more deadly than snake venom; and, yet, certain sectarians claim that it has therapeutic value when sufficiently attenuated.

Such drugs as strychnine, arsenic and the cyanides, which are popularly known as poisons, are only so when given in too large doses. As their therapeutic doses are exceedingly small, it is quite natural for the laity to jump to the conclusion that they are virulent poisons. Take for example strychnine. A medicinal dose exerts a tonic influence on the nerves and muscles which is entirely beneficent. But, multiply that tonus by one hundred, and we have it so exaggerated that the victim dies in intense muscular spasm. The clinical picture of such a death is so terrifying that it is no wonder if the ignorant lay spectator contemplates with fear the very name of strychnine. A fire is good to warm us; but, if we get too close, it destroys us. It is amusing to hear a sectarian doctor (who many be presumed to have at least some scientific education) say, "we (meaning his sect) do not give poisons. We use only vegetable remedies." As if some of the most powerful poisons were not vegetable! It is simply the old story: the favorite weapon of ignorance is, misrepresentation and appeal to prejudice.

I began the study of medicine with a strong prejudice against mercury. My college instruction did not entirely remove

the prejudice because I had seen in the clinic several bad cases of salivation. It was only in actual practice that the facts of experience gradually made clear to my mind the extent to which the truth about mercury had been perverted. I finally realized that, while mercury may be a terrible engine of destruction if used ignorantly or carelessly, yet it is capable of doing a vast amount of good if used judiciously. Even if it had no other value than for the treatment of syphilis, it would be indispensable. However, valuable the intravenous use of arsenic may be, it is pretty generally admitted that a good many cases of syphilis require also the administration of mercury. In the past 200 years, the profession has swung back and forth between mercury and arsenic several times, but has always settled down to the former, in the long run. The present vogue of arsenic has lasted longer than the previous ones, because the intravenous administration makes it more effective, and it has probably come to stay.

As To Calomel

One of the commonest uses of mercury is, the administration of calomel or blue mass in conjunction with quinine, in the treatment of malaria. In the northern United States, the occurrence of malaria is so rare that most physicians have had but little experience with it. My own cases have been entirely imported ones—persons who had been living in tropical or subtropical countries. The doctors who live in malarial districts use calomel in such large doses that I should be afraid of salivating the patients. I have always found small doses satisfactory; but my cases were imported ones, and the fact that they were no longer in malarial surroundings may have had much to do with my success. Those who practice in "the enemy's country" ought to know what doses are needed. Yet, as a matter of scientific interest, I should like to know what percentage of cases are salivated. I used to question soldiers who came back from Cuba or the Philippines as to how many cases of salivation among their comrades they had seen. Their replies were generally to the effect that they had seen some, though not a great many. Of course, such information must be taken for what it is worth; still, the fact that they were familiar with the symptoms and claimed to have seen cases made me resolve that, as long

as the small doses gave me results, I should stick to them.

In conversation with a physician who practices in our own South, chiefly among the colored people, he asserted that 10 to 20-grain doses of calomel were absolutely necessary in order to get results. I said to him, "but don't you ever salivate them?" He replied, "oh yes, but what of it, they're only niggers." Whether that represents a general condition, I do not know. I hope not.

Socalled "biliousness" is very commonly treated with calomel or blue mass, often self-administered. By the way, in over forty years, I have seen less than half a dozen cases that could properly be called "biliousness." A more appropriate name would be "gormandizitis." A certain proportion of people would rather indulge their sensual appetite by taking too much and too rich food, and then try to escape the consequences by dosing themselves, than enjoy that good health which comes from right living. Of course, many are merely ignorant on the subject of intelligent eating; we can do some teaching that may open their eyes, but the average man does not take kindly to teaching.

When the liver is really inactive, I get good results from calomel, 1-10 grain every half hour for six doses, followed by a brisk saline.

As an alternative, I give 1/10 to 1/20 grain three times a day at meals, according to age and condition, continuing it for some time. I have made up in large quantities a tablet triturate containing: Calomel 1/20 grain, sodium bicarbonate 1/2 grain, pulverized ipecac 1/50, bismuth subnitrate 1 grain, saccharin 1/100 grain, oil anise 1/20 minim. In everyday practice, there is only one prescription that I use oftener than this. Infants and older children with deranged digestion are generally benefited by it. In chorea, I use it with or without arsenic. Here is a child of pasty, unhealthy color, capricious appetite and irritable temper. Under a six-weeks' course of this formula, his appearance improves, his appetite becomes normal, his temper less irritable. If his stools are watched, he probably passed the bodies of round worms during the first weeks, for, calomel is a good anthelmintic. If the worms persist, I give him before breakfast, santonin 1/2 grain and calomel 1/2 grain—repeating

in about ten days so as to hit eggs that may have hatched in the meantime.

The alterative prescription given above is also valuable with adults when an alterative is needed. Two tablets after each meal is a dose large enough, if continued for a considerable time as alteratives should be.

In pneumonia, I sometimes give alterative doses of calomel a part of the time, but do not often find it indicated if the digestion has not been impaired by the use of expectorants. I am convinced that the latter often do more harm than good in pneumonia. If we can keep the patient's tongue clean, it means a clean stomach, and that will be more in his favor than dosing him with expectorants. Where I used to give expectorants, I now give a combination of pepsin, pancreatin, diastase, and lactic acid (my digestive tablet which I shall discuss in a later paper), and calomel in alterative doses; or else six doses of 1/10 grain every half hour, followed by a saline. After a pneumonia case has got well under way, I believe the best we can do is to "clean house" and let nature do the rest.

Mercury in Syphilis

In the treatment of syphilis, it is my custom to put the patient on a course of protoiodide of mercury as soon as the diagnosis has reached the point even of a strong suspicion. In the days before the Wassermann test was known, this was not considered advisable. It was the custom not to begin a mercurial course until the diagnosis was sure, lest the patient be put under a cloud for the rest of his life when

no syphilis existed. The effectiveness of early treatment is generally admitted and we have in the Wassermann test the means of preventing uncertainty later on. The Wassermann is not always conclusive at the beginning of a suspected chancre; but, if we use the mercury early, we have taken time by the forelock and, if later tests prove negative, no harm has been done.

The first thing is to determine the dose for the particular case. I give, say, 1/4 grain of the protoiodide twice a day and watch the effect closely, having the patient call often at first. If the symptoms improve, the dose is large enough. If the gums or teeth show suspicious signs, it is too large. Salivation is to be avoided. If it once occurs, the case is apt to be troublesome to manage thereafter. The best results are obtained by the steady use of the smallest dose that will produce improvement. That will be 1/4 grain from once a day to three times a day—seldom more. On an average, I use smaller doses now than I did a score of years ago.

I would sum up the main points thus:

1. Start the mercury early.
2. Watch closely until the dose is determined.
3. Use the smallest dose that will produce improvement.
4. Do not salivate.
5. A little mercury is good even in the third stage.

Treated thus, I find that many cases do not need the arsenical preparations. I use them, if I see that they are needed.

Neither the Wassermann test nor the intravenous use of arsenic are as perfect as they were at first thought to be; but, this fact should not blind us to their value.

A Little Personal Experience with the Bacterins

By J. M. FRENCH, M. D., Milford, Massachusetts

THE story is told of Mark Twain that, when once he was offered a position as lecturer in an agricultural college, he accepted the appointment with alacrity, remarking that he had noticed that he could always talk the best about those things of which he knew the least. On this general principle, my qualifications for writing on

bacterial therapeutics ought to be of the best.

My experience with the bacterial vaccines is only recent and far from extensive. I learned almost nothing about bacteriology in my college days and, up to five years ago, had never had any experience worth speaking of, in either the prophylactic or

the therapeutic use of the bacterial products.

And, yet, when my friend, the Editor of CLINICAL MEDICINE, asked me, a few months ago, to break a silence of several years and send him a few articles on some therapeutic subject, I felt that here was a chance to say something—also, and especially, to learn something—concerning a subject in which I have become much interested in the past few years. Therefore, I told him that I would take as my subject the use of bacterial vaccines. The first of these articles will deal mainly with the results from the employment of the vaccines when administered to myself.

"Try It on the Dog"

It has always seemed to me that the plan suggested by the old maxim, "Try it out, on the dog," had some decided advantages for the doctor who is experimenting with new remedies. Where the outcome is not for the benefit of the dog, it certainly is so for those of his patients who may in this way be saved from having the remedies tried out on themselves, to their injury. The doctor is apt to put himself in the place of the dog and, by so doing, he runs all the risks, while also reaping all the advantages of the trial. If the remedy does not work well, he finds it out in season to avoid using it on his patients to their detriment; while, if it proves to be a good thing, he has in his own experience the best of reasons for trying it on them.

From my childhood, I have been unusually susceptible to colds. This susceptibility has resulted in a chronic bronchitis which is a common heritage among the dwellers in New England. The susceptibility was increased by an attack of pneumonia, in the spring of 1903, since which time the winter season has been a time not only of discomfort but of actual terror to me, so that each year I have felt that my life was in danger until the winter was past.

Of course, I had worked out some kind of treatment which helped me in some degree and under some circumstances. If I could take 4 grains of quinine at the very outset of the attack, it would often abort it. This plan of treatment, together with my theory of colds—which, by the way, has been somewhat modified since that time—was set forth in a paper published in this journal, in October, 1915; but it was never

wholly satisfactory in its results, even as applied in my own case.

In the fall of 1916, while attending to my duties as school physician (which require, among other things, the examination of some 1200 school children at the beginning of each school year), I found myself one night suffering from the initial symptoms of a cold which, in my case, almost always began with an irritation in the throat. I knew that I had not been exposed to any of the climatic changes that we are apt to credit with causing colds. Still, there it was, whatever the cause. I took my usual dose of quinine, but to no avail. I then recalled that, just previous to the onset of the prodromal symptoms, I had spent the afternoon in examining a roomful of children among whom there seemed to be an epidemic of colds, since nearly all the children were coughing, sneezing, and with running at the nose, while still attending school. This looked to me as though this particular cold was the result of infection from some germ not found in ordinary colds. At any rate, it was not like my usual colds.

Immunization Against "Colds"

Just then, I chanced to read, either in CLINICAL MEDICINE or in *The Journal of the American Medical Association*—I am not sure which—an interesting paper by Dr. Malcolm Dean Miller of Wollaston, Mass., giving a chapter from his experience with the respiratory bacterins, in which he claimed, if I remember rightly, that he remained free from colds for nearly a year after being immunized by the use of these agents.

This looked good to me; for, to one as susceptible to colds as myself, the idea of a year of freedom seemed very attractive. So, I sat down and wrote to Dr. Miller, stating my case, and asking his advice. He replied promptly, asking me to send him smears from both nose and throat. I did so, and he reported an abundance of influenza bacilli in the secretions, diagnosed my cold as an attack of grip and advised me to make use of a preparation of stock bacterins containing the killed germs of influenza and also streptococcus, pneumococcus, micrococcus catarrhalis, and staphylococcus pyogenes aureus and albus.

I followed out the line of treatment as he laid it down and, in due course of time, recovered from my cold. I did not, how-

ever, experience any immediate or startling benefit, but rather a slow and gradual improvement, differing from an ordinary recovery mainly by the saving of a little time. That recovery was not accomplished more quickly, was probably due to the fact that I was a long-time sufferer from chronic bronchitis, which had brought about certain changes in the tissues not easily overcome and requiring much more time than would have been needed in a younger person without the background of chronic bronchitis. I have since come to realize, more clearly than I did at that time, that Burggreave's law of Dosimetry, "To chronic maladies we must oppose a deliberate method of treatment," applies as well to the treatment of diseased conditions by the bacterial vaccines as to that by the active principles.

"One swallow does not make a summer."

It is not safe to make up your mind as to the effect of a remedy from one case or even a few. However, one conclusion to which I was inclined by my treatment of my own case, and which has been definitely settled by further experience, was that, with reasonable care and precautions, the treatment is safe. Only gross carelessness in technic and dosage can make it dangerous.

As to the amount of benefit it had been to me, it required a longer time to determine that. To be sure, I had recovered from my cold; but I had done so many times before. Besides, it was not so much recovery which I sought as immunity. It would take a year to settle that, even if one case only were required. I felt that I ought to push to its conclusion the test which I had begun, and become thoroughly convinced of its truth or falsity.

The theory on which the treatment was founded seemed to me a good one, and I believed it was true. So, I made up my mind to continue the use of the bacterins according to the best light at my command. There was a lack of definite information in the limited literature at my command as to how far to push it. The only direction I could get was to take an immunizing course of treatment, usually consisting of from three to six treatments at intervals of from four to seven days; and, when a return of the former susceptibility showed that the effect was worn out, to repeat the immunizing treatment. Recently, I have seen the advice, from an eminent authority,

to be immunized three times a year. I did not have even this to help me then.

It Worked

As months passed by, I realized more and more that *something* had benefited me. Surely I was not taking cold as readily as I used to. Added to that, there seemed to be a general tonic effect to the treatment, as well as a specific effect on the respiratory system. All these things encouraged me to persevere.

So I continued the occasional use of the bacterins, finally settling upon the plan of taking one full dose—usually about 1 mil (Cc.)—each month, and also at any intermediate times when I should feel that it was indicated by the symptoms of a fresh cold. I never heard of any one else using such a plan and do not know to this day whether it would meet the approval of any competent authority. Moreover, I am not writing this to advocate such a plan, but merely to tell you the one which I have worked out, the way in which I came to do it, and how it has worked with me. Like Marcus Aurelius, "if any man can convince me that I do not think or act aright, gladly will I change."

I have followed this plan from that time to the present, though not always with scrupulous exactness. For instance, one winter which I spent in California; not finding it convenient to give myself the injections under the changed conditions, I neglected doing so for a few months. Whether or not it was a result, I cannot say; at any rate, after my return to New England, I contracted the most severe cold I have had in all the five years. I then decided to stick to my text thereafter.

The Test of Time

It is now nearly five years since I began this plan, and I have no hesitation in saying that my vital resistance to colds has very greatly improved. During this time, I have had on the average about one cold a year which might be considered fairly severe, and a few minor ones. I have noted that, while I often have the primary symptoms, as, the chill and sneezing (that is, the vasomotor symptoms of a cold) when exposed to sudden changes of temperature, these soon pass away and leave none of the secondary symptoms which we are now accustomed to attribute to the action of the germs. Sometimes, the early symptoms do persist for a few hours or even a day or

two, and then disappear leaving no mark on the system. Under my old plan of treatment with quinine, I should have considered that the cold had been aborted as the result of the remedy. Under my present theory, I consider that the natural defensive forces of the system, stimulated by the introduction of the killed bacteria, have been able in the one case wholly to prevent, and in the other quickly to overcome, the toxic effects of the invasion by poisonous germs. Whatever may be the explanation, the fact remains that my vital resistance to colds is enormously increased, and my general health and efficiency thereby improved. I can now undertake and carry out duties involving exposure which before would have been very unsafe for me.

Another point, and one of considerable importance, is that, as I look back over these years, it seems to me that there is an improvement with each year. The past year I have had no severe cold, the worst only involving a slight sore throat and lasting but a few days; besides this, there was

hardly anything worth mentioning.

You will observe that I do not claim any miracles. I still suffer from a chronic bronchitis, but it is much less severe than five years ago. I have tried not to overstate anything but give only a statement of facts.

The only case which I have thus far reported is my own; and this has to do with prevention much more than with cure. Indeed, I think that this is much the most important phase of bacterin therapy. I have had further experience which has taken me further afield, and have come to use the bacterial vaccines not only on myself but on my patients, not only as preventive but as curative, and not only in respiratory diseases but in many others. Having been obliged to work my way with fewer helps than the recent graduate would have, my progress may have been slower, and, no doubt, I have made mistakes. Of these things, however, should it seem that the readers of *CLINICAL MEDICINE* would care to know more, I will tell you more in a future article.

Traumatic Meningitis—A Case Report

By L. A. BURROWS, M. D., Chicago, Illinois

MRS. S., age 21, was taken sick on July 13, 1921. She would not eat any breakfast but, about 1 p. m., she drank a cup of coffee which she immediately vomited and after which she fainted. She did not seem to want to talk but desired to be left alone. Complained of photophobia. I was called in at 8:30 p. m. and received the brief history as outlined.

She was semiconscious and complained of severe headache, backache and photophobia. She was constantly digging at the back of her neck. The pupils reacted to light and were equal. The neck was somewhat stiff. Nose and throat negative. Conjunctivæ normal. No rash. Anesthesia of extremities. Knee jerk seemed to be slightly accentuated on the right side. Kernig sign positive. Pulse, 132. Respiration, 18. Patient became delirious at about 9:00 p. m. Direct smears from the eye, nose and throat showed a few staphylococci and a few pneumococci.

An ice bag was placed on the back of the neck and heat was applied to the extremities. Hexamethylenamine, gr. 15, every two hours. Morph. sulph. gr. 1/4 at 9 p. m., 10 p. m. and midnight, and 1/2 gr. at 2 a. m.

From 10 p. m. until about 4 a. m., there were several opisthotonic spasms. At about 5:15 a. m., the respiratory action rapidly decreased in depth and in length and in a few minutes stopped entirely. Artificial respiration was started and continued, as necessary, for about an hour. During this time, the heart action was weak and irregular and heart stimulants were freely given. The patient then became conscious but not entirely lucid at all times. At about 8:30 a. m., she went to sleep in apparently good condition and slept fairly well until about 2 p. m., when she again became delirious. Tincture of gelsemium, gtt. 2, hourly for four hours, quieted her very well and controlled the delirium fairly well all night.

During the day, the knee reflexes were retarded and prolonged. In the morning and since then, she has complained of severe headaches, backaches, numbness of the ex-



trémities and soreness of the neck which seemed to be worse on the left side.

The Explanation

On July 17, the patient called my attention to a lump on the back of the neck



which, she said, was quite sore. She also gave me a history of having bumped her head on an iron post while swimming with

her head under water, the night before she was taken sick, at which time she had a severe cramp in her legs and was quite dizzy for several minutes. Examination of the neck showed the lump to be the spinous process of the second cervical vertebra which is a little more prominent than ordinary and was possibly a little out of place; for, strong extension seemed to reduce the lump a good deal. The process of the third



cervical vertebra seemed to be turned slightly to the right.

X-ray examination of the neck (see photographs) shows a fracture of the odontoid process of the atlas, the process being impacted at the point of fracture and bent slightly to the right side. There is also a fracture through the left articular facet of the atlas.

The patient is being kept in bed with the head of the bed elevated sixteen inches and extension is applied by means of a halter constructed with leather straps to which a rope is fastened and run through a pulley on the head of the bed, a fifteen-pound

(about) sand bag being attached to the rope.

Since applying this apparatus, the headaches have been entirely relieved, as have also the other symptoms.

But with the extension alone it has been impossible to immobilize the neck; so, a plaster cast was applied coming below the

arms and in which an iron bar was incorporated to form an arch about 9 inches above the top of the head. Strong extension was maintained while the cast was being applied and continued by attaching the straps about her head to a strong spring attached to the arch of the iron bar, as shown in the accompanying picture. (page 617).

The Adrenal Glands and Their Relation to Modern Medicine

By REGINALD WEILER, B. S., Ph. G., M. D., New York City

Professor of Chemistry at Carver College

[Continued from August issue, p. 548.]

THE inhibitory centers are not directly stimulated by suprarenal extracts, but the adrenal active principle acts directly on the cardiac muscle as a stimulant, irrespective of any action upon the inhibitory centers.

Furthermore, adrenal extract causes cardiac and vascular contraction by stimulating directly the muscular elements of the heart and vessels. This action is mainly on the arterioles. Consequently, an excess of adrenal extract in the blood stream increases the contractile powers of the cardiovascular system.

Capillaries are not supplied with muscles. They have endothelial plates instead. As adrenalin acts directly on the muscular tissue, capillaries are not influenced directly by this substance.

Therefore, when vessels supplied with muscular tissue contract, the capillaries dilate; and when vessels supplied with a muscular coat dilate, capillaries contract owing to the resiliency of the latter when the blood is withdrawn to the dilated larger vessels.

That is, the capillary dilation and contraction is inversely proportional to the dilation and contraction of the larger muscular vessels. Mathematically this phenomenon would be represented:

(Vm=Vessels with muscular walls; C=Capillaries; K=Constant representing the amount of blood present between a unit length, one end being on a muscular vessel; the other on a connecting capillary.)

$$Vm/C=K$$

If hemorrhage takes place in the adre-

nals, nature tends to localize this hemorrhage.

Adrenal Apoplexy

Besides insufficiency of the adrenals caused by disease of these organs, there is another form brought on by general blood pressure when this is sufficiently elevated (as in the course of some infections or intoxicants) to cause intense congestion of the adrenals and rupture of some of their blood vessels. The suprarenal glands have very little recuperative powers. Therefore, when once a portion of them has been destroyed, there is but little tendency for compensatory processes to set in. When sufficient hemorrhage has taken place to destroy the greater part of these glands, the name adrenal apoplexy is given to the process.

The commonest disorders tending toward adrenal apoplexy are: Pneumonia, diphtheria, thrush, variola, scarlatina, tuberculosis, meningitis, cancer, septicemia, purpura, uremia, asphyxia, burns, typhoid fever, jaundice and eclampsia. In fact, there is a tendency for this grave accident to take place whenever there is a virulent toxin, of perhaps a special order, circulating in the blood stream. Suprarenal hemorrhage may be caused by the pneumococcus of Friedlander and the bacillus pyocyaneus. There are also many other bacilli which cause congestion, sometimes amounting to actual hemorrhage of the adrenals. Some of these are: Diphtheria toxin, Loeffler's bacilli, staphylococcus aureus and albus, pneumococcus, bacillus typhosus, and others.

If actual hemorrhage does not occur, in-

hibition of the adrenal functions most certainly will result from toxins circulating in the blood.

It is partly by exciting the adrenal centers in the splanchnic that various toxins predispose the adrenals to hemorrhage. A very fair example is the following:

We all know that arsenic acts as a violent poison. Its toxic manifestations occur be-

duces the intense abdominal pain. Engorgement of these same vessels gives rise to the extreme diarrhea. This phenomenon is also caused by dilation of the intestinal vessels. The diarrhea, by reducing the liquids, inhibits renal secretion even so far as to produce anuria. The flow of the blood from the cerebral vessels to the great abdominal vessels (which vessels are capable

<i>Age</i>	<i>Diagnosis</i>	<i>Weight of the Adrenals</i>	<i>Macroscopic char- acteristics</i>
38	Erysipelas and Nephritis	Rt. 7.00 Gm. Lt. 8.00 Gm. Tot. 15.00 Gm.	Wide Cortex Clear p. z.*
31	Appendicitis Peritonitis	Rt. 5.00 Lt. 6.00 Tot. 11.00	Cortex thin p. z. not clear
48	Carcinoma	Lt. 5.00 Rt. 6.00 Tot. 11.00	Small Cortex p. z. not clear
30	Miliary Tbc. Aplasia rt. Kidney	Lt. 7.00 Rt. 6.00 Tot. 13.00	Wide Cortex p. z. clear
23	Nephritis Meningitis	Lt. 7.00 Rt. 6.00 Tot. 13.00	Wide Cortex p. z. clear
30	Addison's Disease	Lt. 6.60 Rt. 8.30 Tot. 14.90	Large Cortex Very few marks Wide p. z.
21	Empyema Bronzed Skin Tbc. of Kidney	Lt. 4.40 Rt. 7.30 Tot. 11.70	Wide Cortex Very few marks Wide p. z.
30	Universal Tbc.	Lt. 6.10 Rt. 5.80	Cortex 1.2 mm. p. z. clear
23	Erysipelas Bronzed Skin	Lt. 9.20 Rt. 8.90	Cortex 3.5 mm. p. z. clear
36	Miliary Tbc.	Lt. 6.25 Rt. 5.80 Tot. 12.05	Cortex small p. z. indistinct

*p. z. = pigmented zone. [See p. 620 for explanation.]

cause it arrests the functions of the adrenals. Therefore, the various symptoms of arsenical poisoning can be explained thus.

As a result of central accumulation of blood (due to lack of contractile stimulant from the adrenals) the extremities and peripheral tissues are cold—lack of blood. The muscles, also deprived of a large amount of their normal blood supply, lose their power. The tension resulting from accumulated blood in the abdominal vessels upon the very rich nerve supply pro-

of holding the greater part of all the fluid in the body) gives rise to the phenomenon of syncope. The accumulation of waste products, as a result of the inhibition of the organs of elimination, gives rise to the convulsions so often witnessed in arsenic poisoning. All these same symptoms are produced by removal of the adrenals.

Various toxic products, such as lead, alcohol, and tobacco, which are capable of causing arteriosclerosis, are causes of hypertrophy of the adrenals. These organs can be stimulated by mental emotions which

act on the splanchnic nerves. They are also stimulated by alcohol, tobacco and certain diseases. A hyper condition of the thyroid may also produce a hyper condition of the adrenals.

High fever, together with high blood pressure, on the one hand, and low fever together with low blood pressure, on the other hand, are the signals that the adrenals are endangered.

The table on page 619 is taken from a report in a German medical journal, in 1918. It shows the relation of different diseases to the adrenals. It must not be overlooked that all the people were, at the time of their deaths, greatly undernourished. The table can be found on the preceding page, (p. z.=Pigmented Zone).

The greater the pigmented zone, the more the adrenals are affected by the toxin or injury.

Adrenal preparations, i. e., extracts, powdered glands, active principles, cause a rise in the blood pressure, with slowing of the heart beat. The results of injection of these products are but transient and the result of injection not permanent.

These various preparations moreover possess an elective action on the sympathetic nervous system. Whenever stimulation of these nerves produces an augmentation of function, an injection of adrenal extract will do the same; and whenever stimulation of the sympathetic produces an inhibition of a peripheral end organ, the results are the same if adrenal extract be injected.

Still another function of adrenal secretion is, regulation of change of pigmentations of the skin, in so far as it controls the breaking up of certain albumen end-products, such as, for instance, tyrosine and derivatide.

The use of the pigmented layer of the adrenals seem to be as follows: Toxins are, in this tissue, changed to tyrosine or some similar body or bodies, perhaps p-oxyphenylethylamine. From here, these products are transferred to the cells of the cortical layer where they are oxidized to coloring matter, after which, through the medium of reduced medullary substances (acting as a catalyser) these substances are transferred into adrenalin.

Because, when there is an interference with the adrenal functions, there is found a collection of urinary end-products in the blood, it is certain that there is a relation between the breaking up and elimination of

these products and the functions of the adrenals. We, therefore, can arrive at the following summary:

- 1.—There is an increase of adrenal secretion when there is an increase in renal end-products.
- 2.—Renal end-products increase if adrenal secretion diminishes.

It has also been determined that there are marked adrenal changes as changes take place in the kidneys proper.

The adrenal secretion is formed in the adrenal medulla and passes into the general circulation by way of the adrenal vein.

Adrenal preparations are all endowed with marked reducing properties. That is, they are capable of being oxidized, i. e., taking up oxygen. Yet, it has been shown that adrenalin preparations, even in non-toxic doses, produce a rising in temperature. In Addison's disease or after removal of the adrenals, there is a rapid decline in the body temperature. This certainly suggests that adrenal secretion is an oxidizing agent; yet, we just said that it was a reducing agent.

Another fact in this connection is, that adrenal extracts exercise no influence on the pulmonary tissue. This fact accounts for the tendency to pulmonary edema in patients treated with adrenal extracts.

In hypernephroma of children, a disease which is caused by excessive adrenal tissue, there is excessive oxidation and nutrition of the subject.

Hemoglobin takes up oxygen as fast as that gas becomes dissolved in the blood serum. The secretion of the adrenals has a marked affinity for oxygen and the secretion invariably reaches the lung air-cells; the adrenal secretion absorbs oxygen and becomes a constituent of the hemoglobin and consequently of the red corpuscles. That is, the oxygen here laden with adrenal secretion becomes a constituent of the albuminous hemoglobin in the blood plasma. The red corpuscles, after absorbing the oxygenized adrenal secretion, yield it to the blood plasma again in the form of droplets, the so-called "blood platelets." Thus, oxygen-laden adrenalin is distributed by the red corpuscles to all parts of the body as an oxidizing agent.

It is then the adrenal secretion which, after absorbing oxygen from the pulmonary air-cells and being distributed over the entire organism, supplies this organism together with the blood with oxygen.

Then, the oxidizing constituent of the hemoglobin is the substance which in turn sustains tissue oxidation and metabolism. We can then safely say that adrenal secretion acts as a catalyst for oxygen.

Therefore, the surplus of adrenal secretion tissue and consequently the surplus of the metabolic activity clearly accounts for the enhanced nutrition of hypernephroma.

Identifying the adrenals as the control station of oxidation gives us a plausible theory for the heretofore partly unexplainable phenomena of fever in general diseases. We must, of course, bear in mind that toxins stimulate the adrenals to hyperactivity.

Now, if we consider the adrenal glands as the seat of lesion, let us examine the symptoms of adrenal disease in these new terms.

Signs of Adrenal Disease

The adrenals, being the seat of degenerative changes, fail to function properly. Hence, the low temperature and clamminess due to deficient oxidation, the marked and progressive asthenia, with great lassitude, due to insufficiency of muscular metabolism. The small and feeble pulse, weak cardiac action and the steady decline of blood pressure are due to inadequate metabolism of the cardiac and vascular muscles. The tendency to vertigo and mental torpor can be ascribed to ischemia of the cerebin, the result in turn of general vasodilation and circulatory torpor, resulting in the withdrawal of the blood to the deeper vessels. The bronzing is due to the circulatory stasis entailing the deposition in the epidermis of what has been chemically found to be an oxidized adrenal product, Melanen.

Therefore, the true function of the adrenals is not only that of sustaining vascular tone but to promote and sustain pulmonary and tissue respiration.

Because of the fact that, embryonically, the medulla is derived from the same tissue as the great ganglia, its active principle stimulates mainly the plain muscles.

The vessels responding most to adrenal secretion are those supplying the mesentery, the spleen, the kidneys and the other abdominal organs. Both the cerebral vessels and the vessels of the extremities contract in response to adrenal secretion when offered locally. But, following an injection of adrenal active principle, the general rise in blood pressure is so great that the more feebly contracting cerebral vessels and the

vessels of the extremities give way before the general vasotension and there results an actual dilation in these vessels.

Hypoadrenia

There appear to be three distinct types of hypoadrenia:

1.—Functional, as, in tardy development, fatigue, old age, action of certain substances, etc.

2.—Progressive, Addison's Disease, caused by an organic lesion of the adrenals proper or of their nerve supply, such as, tuberculosis, cancerous, fibrous, and other lesions.

3.—Terminal complication of infections and toxinemias, owing to the exhaustion of the secretory activity of the adrenals.

The prominent symptoms of functional hypoadrenia are, asthenia, great muscular weakness, extreme sensitiveness to cold, cold extremities, hypotension, weak cardiac action and weak pulse; anorexia, anemia, slow metabolism, constipation and psychoasthenia.

To prevent hypoadrenia in infants, we should by every means endeavor to prevent infection or intoxication. One of the cardinal rules in prevention is, to feed babies on mother's milk.

To a child ten or twelve years old, the following prescription is useful in the prevention and care of hypoadrenia:

R Tabloid Thyroid Gland....gr. $\frac{1}{2}$ to 1
 Tabloid Adrenal Gland....gr. 1 to 2
 Massa Ferri Carbonatis....gr. 1 2

M. et Fiat Caps. No. 1.

Sig:—One such capsule three times a day during meals.

Together with this, we should order a liberal meat and milk diet. Strychnine or digitalis should be given if the heart is weak. These agents tend to keep up a slight hyperemia of the adrenals, aiding the efficiency of the child's defensive resources.

It is wrong to look upon bronzing as the sign "*sine qua non*" of Addison's disease. There are many instances of that malady in which the patients exist and die without this symptom having made its appearance. Bronzing only appears as an advanced sign of chronic hypoadrenia. There are also several other diseases that cause bronzing, i. e., tuberculosis of the renal structure proper, nephritis, and others.

The lesion of Addison's disease may exist anywhere in the pituitary-adrenal nerve path and then, through inhibition of the functions of the adrenals, all the classical symptoms may be produced. The symptoms of this disease are due to an insufficient

secretion of the suprarenal glands to answer the purpose of sustaining general oxidation, metabolism, nutrition and the tone of the cardiovascular system.

The number of erythrocytes and the hemoglobin content are always reduced; the leukocyte count is normal in Addison's disease. The symptoms of this malady are, hypothermia, coldness, dyspnea; and they are caused by deficient oxidation. An aggregation of coldness and dyspnea is produced by vasodilation and a consequent collection of blood in the great abdominal vessels. Further symptoms are, progressive asthenia, weak heart action and vasohypotension. All muscular tissue is sure to be weakened by a deficient flow of adrenal secretion because of the consequent loss of its contractile power. A direct result of deficiency of secretion is the cause of the three signs mentioned. Still other prominent symptoms are, emaciation, anorexia, vomiting and diarrhea. The first two result from the deficient oxidation and retarded metabolism. The vomiting is mainly caused by gastrosis. This condition results from deficient nourishment and consequent relaxation of the muscles of the stomach. The peristaltic action of this organ is also very faulty due to the same conditions. The diarrhea results from passive congestion of the mucosa due to the relaxation of the intestinal arterioles and the central accumulation of blood. Bronzing occurs only in advanced hypoadrenia. The actual cause of the bronzing is, the oxidised product of the adrenals in combination with certain albumins such as tyrosine. When freed from its circulatory surroundings, this active principle is a reducing agent and goes through its usual color changes ending in a bronze. Lumbar and abdominal pains are merely pressure symptoms. These symptoms are caused by pressure of the large volume of blood in the abdominal vessels on the nerves which so richly abound in this region. The tendency to syncope and impairment of vision and other special senses may be accounted for by the low blood pressure and consequent poor nutrition of the optic, auditory, and other structures. The syncope is caused by cerebral ischemia, which may become dangerously severe.

Adrenal secretion is endowed with marked antitoxic properties (especially that part derived from the cortex) and, when this substance is diminished, it stands to

reason that headache, irritability, hallucinations, delirium, convulsions and other toxic manifestations should take place, due to the accumulation of muscular toxins, circulatory toxins, tissue toxins and, in fact, all endotoxins.

The coma and sudden death so often witnessed in Addison's disease are due to suprarenal apoplexy, or adrenal hemorrhage. This takes place because toxins accumulate. When these products reach a certain concentration, they cause a rise in blood pressure and fever. The remaining functioning suprarenal structures are so weakened by disease that they are unable to withstand a rather sudden increase in blood pressure (be it ever so slight) and give way under the strain.

Treatment of Addison's Disease

As for treatment, the only hope is, to supply the organism with much-needed adrenal extract. It directly follows from this that adrenal extract must be administered in some form or other. The dosage must be carefully adjusted to each individual case. It is necessary to start treatment with an extremely small dose and gradually increase; or, else, alarming symptoms will appear which may result in death. This, of course, is due to suddenly flooding the system with an excess of adrenal active principle.

Adrenalin or other members of the epinephrin group should not be used, as they raise the blood pressure too suddenly causing the to-be-dreaded adrenal hemorrhage. The "*glandulae suprarenales siccae*" of the U. S. P. offer probably the best preparation. If the temperature and blood pressure are considerably subnormal, grains 3 is the proper dosage to start with. It should be given twice a day. Smaller dosages are indicated if the symptoms are not so severe. The dosage must be increased until the functions become normal. Pituitary gland is also indicated in Addison's disease. Five minims of a good preparation should be given intramuscularly once a day, until the blood pressure is normal and stays normal. Iron in some form or other should be administered. Drugs of the order of digitalis and strychnine should be used with extreme caution if at all, as they expose the patient to the dangers of adrenal apoplexy. Rest should be insisted on because of the dangers of syncope and the dangers depending on anorexia, also because rest will result in the minimum amount of muscle toxins

being formed and accumulating. Meat and milk should be given, but otherwise a very light diet ordered. Bismuth and cerium oxalate are the safest drugs to use for the diarrhea. Lavage is helpful for the vomiting.

If the disease results from tuberculosis, which it usually does, some advantage may be secured by giving creosote carbonate gr. 6, three times daily. Sodium iodide may be given intravenously or by mouth, as may lithium iodide, with advantage.

Terminal hypoadrenia is that form of adrenal insufficiency which occurs in the course of an acute disease as a direct result of exhaustion of the secretory activity. All through the disease, the glands have been functioning more than usual in order to combat the toxemia and, when the disease is over and the toxins eliminated as a stimulant, the gland is simply worn out

for the time being. It has been found that adrenal glands subjected to extraordinary excitation fail to give the chromaffin reaction, after death due to exhaustion.

The delayed convalescence of the pneumonias, typhoid fever, and influenza is in all probabilities due to adrenal insufficiency. The well known symptoms are, weak pulse, prostration, a tendency to syncope, hypothermia and low blood pressure. When in this condition, the person is subject to all kinds of infections, also to disorders of nutrition and to cholelithiasis.

By way of treatment, adrenal and pituitary glands are indicated. If the symptoms of deficiency of the circulatory apparatus and of deficient circulatory osmosis are present, the most reliable remedy is normal salt solution ($\frac{1}{2}$ to 1 pint) injected subcutaneously or intravenously as is required.

[To be continued.]

The Microbial Symbionts of the Tongue and Alveoli in Health and in Pyorrhea Alveolaris

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FOR a period of about two decades, dentists have discussed pyorrhea alveolaris ("Riggs' disease") with much energy but without reaching any conclusions as to the true causes of this disease. No cure has as yet been found, neither have the routine and withal painful as well as expensive and time consuming treatments (tartar scrapings) been of any avail. Tooth powders, pastes, liquid preparations, washes, gargles, etc., purporting to cure, prevent or alleviate pyorrhea, have been manufactured and sold by the ton, but pyorrhea marched on, unchecked thereby.

The Riddle of Pyorrhea Alveolaris

Dentists speak of various causative factors, as, abnormal secretory activities of the mouth, of the salivary glands, of the digestive tract, and of the ductless glands. Others lay the blame entirely upon the calcareous deposits which creep downward along the roots of the teeth and, little by little, cause a loosening of the teeth which are finally

extracted or are lifted out between thumb and fingers or, mayhap, drop out of their own accord. Such teeth are commonly found to be entirely sound, no decay being present, although the osseous structure of the alveolus is usually much necrosed and the soft tissues have disappeared, so that the roots are much exposed by the time the teeth are well loosened. The great majority of dentists lay great stress upon the preventive influence of the vigorous use of a stiff-bristled tooth brush, but these tooth brush gymnastics not only do not improve matters but have in many instances done much mischief in the way of spreading the infection.

Some progress has, however, been made in the study of this very annoying and most troublesome disease which afflicts about 80 percent of human adults. The basic investigations which are pointing the way to a cure for pyorrhea, have been made by bacteriologists and amebiologists, and an

extensive literature is already at hand. It is true, much of this literature is fragmentary; still, it is all of value and a few articles are classics in that line of investigation and research. A review of this literature, although highly interesting as well as instructive, would not add to the value of the present report. Rather, we shall confine ourselves to a brief summarizing statement of the findings based upon the microscopical examination of the microbial organisms of the tongue and the mouth cavity, adding a discussion of the factors concerned in the etiology of pyorrhea, and suggesting a rational as well as scientific treatment of this disease, based upon certain experimental tests and observations.

Microorganisms Found in the Mouth Cavity

Anyone who has given attention to the fauna and flora of the mouth cavity has been strongly impressed by the number as well as the variety of the organisms present. Most of the observers have limited themselves to a recording of the organisms found in and upon the gums and the teeth and upon the buccal membranes, in health and also in necrosis of the teeth and of the osseous structure of the alveoli and jaw bones. The organisms of the mouth cavity were divided into three groups. Those which were supposed to be normally present, those which were believed to be pathogenic, and a third group to which no particular activity or influence could be ascribed. The first mouth-pathogen to be described was the *Bacillus necrosi-dentalis*, the cause of dental caries. Two actively motile mouth symbionts were described, the *Spirochaeta microdentium* and the *Vibrio (Spirillum) buccalis*, concerning which the opinion was divided, some believing them to be harmless and more or less accidentally present while others believed them to be the cause of dental caries. The almost universally present *Leptothrix buccalis* was quite generally believed to be harmless. Several species and varieties of oral amebas have been discovered (*Entameba dentalis* and *E. buccalis**), which Bass and others declared to be the true cause of that form of pyorrhea alveolaris which results in the loosening of the teeth, without dental necrosis. Others again expressed doubt as to this contention, believing the amebas to

be entirely harmless. Still others declared that the mouth harbored both kinds of amebas, harmless and also those which were pathogenic. Doctor Bass based his opinion on the observation that patients treated for amebic dysentery were also cured of pyorrhea—through the use of emetine which is a specific in amebic dysentery. There are several species of streptococci to be found on teeth, tongue, gums, and in the mouth cavity generally; besides staphylococci, streptobacilli, diplobacilli, and bacilli; to say nothing of the occasional presence of such pathogens as the bacillus of tuberculosis, the bacillus of diphtheria, pneumococci, the *Bacillus catarrhalis*, and also the *Treponema pallidum*, the gonococcus and the organism causative of Vincent's angina.

Further Studies Needed

Despite all of the work which has been done, we have hardly made a dent into the possible knowledge of the oral microbial symbionts. It is to be hoped that a goodly number of dentists, having the research instinct and also the ability, inclusive of the necessary laboratory facilities, will desist from the useless and never-ending task of removing tartar from pyorrheal teeth and will enter upon an extensive as well as intensive study of these symbionts. It is furthermore urged that, when these investigators engage in such work, they will not neglect to make the basic observations and studies on fresh and unstained slide mounts, using stained preparations and cultural tests for check and corroborative purposes. It is also necessary that the investigators should have a good general knowledge of the phenomena of symbiosis as a prerequisite for entering upon such study.

Microorganisms in the Diseased Mouth Cavity

We are somewhat better informed as to the fauna and flora of the abnormal mouth, than of the normal mouth. The pathology and treatment of the multitudinous forms of stomatitis and of gingivitis (superficial as well as interstitial) are well known, and there is little uncertainty as to the primary cause of dental caries; however, no one has as yet explained the microbial symbioses involved in these pathological conditions. The dominant organisms in pyorrhea have been determined, but no one has as yet explained the relationship that these organ-

*Probably identical with *E. gingivalis*, of Gros, and *E. pyogenes*, of Verdun and Bruyant.

isms bear to the usual or normal symbionts of the mouth cavity, more especially those of the tongue and gums and those which lodge about the necks of the teeth. A study of the scrapings taken from the dorsum of the tongue will show that the entire surface of this organ is literally coated with microorganisms of various kinds. A large number of aggregates representing practically pure cultures of coccus forms will be found, besides any and all of the forms that may occur in the mouth cavity and about the teeth, but in widely different numerical proportion from that found in the different alveolar regions. In fact, every tooth and alveolus will reveal its distinctive bacteria and bacterial associates.

Numerous investigators have reported upon the cultural (plate, tube and other special methods) findings of dental caries and of pyorrhea alveolaris. Thus, Lescossier (A. W. Lescossier. *Bacterial Findings and Their Relationship to Pyorrhea Alveolaris and Interstitial Gingivitis. Studies from the Research Laboratory of Parke, Davis and Company*, VI: 15-19. 1917.). Table 1 in that article gives the organism findings in seventy cases of pyorrhea alveolaris as follows:

Organisms	No. of times present
Micrococcus catarrhalis	23
Streptococcus	19
Bacillus septus	15
Bacillus necrosi-dentalis	14
Staphylococcus aureus	12
Micrococcus citreus-granulosis	6
Pneumococcus and Saccharomyces, each in	5

Table 2 in the same article gives the observations of Medalia in 115 cases of pyorrhea alveolaris as follows:

Mild or incipient cases (14).	
Pneumococcus and staphylococcus.....	10
Pneumococcus	2
Staphylococcus and streptococcus.....	1
Sterile	1
Moderately advanced cases (15).	
Pneumococcus and staphylococcus.....	8
Pneumococcus	6
Staphylococcus	1
Sterile	1
Far advanced cases (85).	
Pneumococcus and staphylococcus.....	49
Pneumococcus	18
Pneumococcus, streptococcus and staphylococcus	10
Pneumococcus and staphylococcus.....	3
Staphylococcus and Micrococcus catarrhalis	1
Staphylococcus	1
Pneumococcus and M. catarrhalis.....	1
Sterile	1

Interesting as these tables are, they are

very unsatisfactory and disappointing and quite misleading to those who are not well grounded in pathology and microbiology. As recorded, the finding would lead one to suppose that the infections causative of pyorrhea were similar to, if not identical with, the causative infections in catarrh and pneumonia; which is certainly far from the facts. The findings do indicate the prevalence of these microorganisms in the mouth cavity and would thus be of much interest to those making special studies of disease carriers. Both investigators neglected to mention the commonly present involution forms of the diphtheria bacillus nor did they mention the leptothrix, the streptothrix, the spirochetes, the vibrios and the entamebas which are constantly present in pyorrhea as well as in the healthy mouth cavity.

The following tabulation is from the report by Smith and Ludwig (*Bacterial Findings in 107 Cases of Abscessed Teeth in Children. The Nebraska State Medical Journal*. IV: 5, May 1919).

Organisms present	Times present
Staphylococcus pyogenes aureus.....	36
Streptococcus hæmolyticus.....	26
Streptococcus pyogenes	19
Diplococcus pneumoniae.....	18
Staphylococcus pyogenes citreus.....	9
Staphylococcus pyogenes albus.....	7
Micrococcus catarrhalis	4
Diphtheroid bacillus.....	3
Streptococcus viridans	2
Bacillus pyocyaneus	1
Bacillus fusiformis and Vincent's Spirochete	1
Sterile	8

This tabulation differs from the others in its greater completeness as far as the citation of organisms is concerned, but otherwise it has the same faulty characters. The cultural findings based upon the use of certain media (Loeffler's blood serum, agar plain, litmus lactose agar, dextrose agar, beef bouillon, and bouillon with hen hemoglobin) tell us little or nothing as to the causes of the teeth abscesses in the children, nor do they give us any true insight into the symbiotic relationships of the organisms listed to the other mouth organisms which must have been present also, and to the body cells of the oral cavity. The report of "sterile" cases is a laboratory inconsistency as there is no sterile mouth cavity, and it simply serves to emphasize the incompleteness and, to a certain extent, the uselessness of the cultural find-

ings, unless the direct microanalytical studies are simultaneously carried out and the findings carefully noted.

The following is a tabulation of the microorganisms which have been found in the mouth cavities of healthy adults, based upon a careful microanalytical study of some sixty persons. The examination included scrapings from tongue, teeth and gums taken at variable intervals of time.

Organisms found in the normal mouth.	
Leptothrix buccalis.....	Very common and abundant.
Leptothrix inornata.....	Rather rare.
Streptothrix.....	Very common, not abundant.
Spirochaeta microdentium.....	Very common, not abundant.
Vibrio (Spirillum) buccalis.....	Very common, not abundant.
Staphylococci.....	Very common, fairly abundant.
Streptococci.....	Common, rather sparingly present.
Entamebas.....	Not common, few in number.
Bacilli (food digesting).....	Very abundant, always present.
Mold (Saccharomycetous).....	Rarely present.
Yeasts.....	Occasionally present.

Organisms of Pyorrhea Alveolaris

The following are the dominant organisms in cases of pyorrhea alveolaris representing all stages of this disease, from the mildest to the most advanced cases. These studies were also based upon the direct microscopical examination supplemented by a comparative study of specially stained smear preparations. The organisms are named in the order of their abundance.

- Leptothrix buccalis, associated with, Staphylococci and Streptococci.
- Bacillus necrosi-dentalis, with dental caries only.
- Bacillus necrosi-ossei, with osseous necrosis.
- Spirochaeta microdentium, always associated with,
- Vibrio (Spirillum) buccalis, and with leptothrix, in calcareous deposits.
- Spirochaeta vincenti in ulcerative stomatitis and in pyorrhea.
- Bacillus fusiformis, (always associated with the Spirochaeta vincenti).
- Entamebas, in calcareous deposits largely.
- Molds, occasionally present.
- Yeasts, occasionally present.
- Bacilli (food digesting), in large numbers.

Among the very frequently present incidental symbionts in the healthy mouth, as well as in pyorrhea, are some of the invo-

lution forms (especially the barred Westbrook types) of the Bacillus diphtheriae, or diphteroid types of bacilli. Encapsuled forms resembling the pneumococcus are also quite common. The yeasts are sparingly present as a rule and are largely derived from certain yeast bearing foods. Among the molds which are occasionally present in health as well as in pyorrhea, is a hyphal fungus which reveals many of the habits of the saccharomycetes. The hyphae show distinct branching, but transverse septae are wholly wanting and cell proliferation appears to be by budding.

Among the microorganisms which occasionally appear in the mouth cavity, in health as well as in pyorrhea, may be mentioned the following:

- Bacillus coli, occasionally present.
- Oidium albicans, in thrush of children.
- Bacillus tuberculosis, in tuberculous ulcerations of mouth.
- Treponema pallidum, in syphilitics.
- Diplococcus gonorrhoeae, in gonorrhea.
- Bacillus typhosus, in typhoid and in typhoid carriers.
- Dysentery group.
- Bacillus buccalis maximus, apparently normal to mouth cavity.

The organisms normal to the mouth cavity are not readily cultivated in artificial media which perhaps explains why so little is said about them on the part of those bacteriologists who rely almost wholly on the findings by the cultural methods. There appears to be some doubt as to the reality of the organism of the mouth which is named Spirochaeta dentium, described as a slender microorganism having many spiral turns and which has been mistaken for the Treponema pallidum. It stains reddish with the Broca differential stain. I am of the opinion that the separated, long, delicately spiral, single flagellum of the Vibrio buccalis has been mistaken for spirochetal organisms. This flagellum tapers toward both ends and the attachment to the body cells appears to be slight; during the frantic movements made by the vibrio, this flagellum becomes detached and may be mistaken for a spirochete-like organism in the stained smear. Whether or not the lost flagellum is regenerated, was not determined.

Subjective and Objective Signs

In addition to the organisms named, the secretions from the pyorrheal alveoli contain abundant epithelial cells, abundant

mononuclear cells, also erythrocytes (in severe cases) and much mucin or mucinoid matter. The salivary secretion is more or less disturbed and there is more or less bad taste in the mouth, especially at night toward the morning, and the patient has some repugnance to swallowing the saliva. The gums feel sore and the teeth ache and are sensitive, at times to the point of pain on masticating or on closing the jaws firmly. In the advanced cases, the patient is constantly reminded of his condition and not a single meal can be eaten with comfort. When the jaws are at rest, there is usually no discomfort felt. Indeed, there is at all times considerable variation in the symptoms, these being now aggravated and again so much improved that the patient believes that the trouble is vanishing, only to have it reappear again and in ever increasing severity. By and by, sudden attacks of stomatitis and gingivitis associate themselves with the pyorrhea, making life really miserable. At the end, a dentist is consulted, with the result that the offending teeth are extracted; which means a goodly number, as a rule. With the gradually augmented symptoms as enumerated, there is noticed a correspondingly increasing loosening of the offending teeth which, in time, become easily movable by the pressure of the tongue. As already stated, they finally become so wobbly that the patient believes he can pick them out between finger and thumb, but, to his astonishment, he finds that they are still rather tightly placed. When the dentist finally extracts these loose, wobbly teeth, he will observe that the entire root of the tooth has an irregular coating of tartar or calcareous matter upon the exterior, which is so firmly attached as to make its removal next to impossible without injuring the dental substance itself. It is this calcareous matter which the dentist has been trying for years, to remove and for which torturing operation the patient paid hard-earned money, getting no lasting benefit in return.

Bacterial Food-Digestion in Mouth

Thus far, no careful study has been made of the bacterial digestion of food substances which lodge in the mouth and about the teeth. It is known that all of the food particles, which lodge upon the dorsum of the tongue and upon the gums about the necks of the teeth, are immediately invaded by the

Leptothrix groups and by a multitude of bacillar associates. If the teeth are thoroughly brushed and cleansed just before eating a meal and the food deposits about the teeth examined within half an hour after the meal is eaten, each and every food particle will have been completely invaded by the bacteria. Starch digestion will have been almost completed. Meat particles are immediately attacked by a host of minute bacilli and such meat particles as lodge between the teeth are very soon digested. Fat globules are emulsified and soon disappear entirely, apparently having undergone digestion. In brief, the mouth digestion is very closely similar to the intestinal digestion and the food-digesting microorganisms of the mouth cavity are as normal as are the food digesting microorganism of the intestinal tract. Cellulose is not digested. The *Bacillus coli* is never present in sufficient numbers to take any active part in the mouth digestion of food.

In cases where the bacterial food digestion of the mouth is interfered with or hindered, as in pyorrhea, through the use of tobacco, through clove chewing, use of alcohol, etc., the food particles become caseinated about the necks of the teeth and may undergo partial putrefaction, instead of digestion, resulting not only in unsightly teeth but also in bad breath, unless the food particles are removed through rinsing or by means of the tooth brush. That certain mouth bacteria take a very active part in food digestion, cannot be denied; but the sum total of such digestion is so slight that it is a process of little consequence indeed as compared with the sum total of the daily food digestion of the individual. It is of importance as explaining why certain persons, who are free from pyorrhea and of other mouth diseases and who never use a tooth brush, nevertheless possess sound and quite clean looking teeth. The food particles are quickly digested and rendered soluble and washed into the digestive tract with the swallowed saliva, or partially expectorated. The food-digesting bacteria of the oral cavity and of the alveoli undoubtedly bear an important symbiotic relationship to the mouth pathogens, as in pyorrhea and in gingivitis; but, just what this relationship may be, has not yet been determined. The indications are, that they encourage such disturbances rather than checking or preventing them, for, it is only

too evident that the presumptive cause of pyorrhea alveolaris, namely the spirochetes, the vibrios, the *Bacillus necrosis ossei*, and also the entamebas and the staphylococcus and streptococcus groups, are found in close association with the food digesting bacteria.

Influence of Salivary Enzyme

Just what part is played by the salivary enzyme (amylase or ptyalin) in the growth and development of the mouth and alveolar organisms, in health and in pyorrhea alveolaris, has not been determined as yet. We do know that this ferment is largely concerned in digesting the starch remnants which cling to and about the teeth during mastication, and thus very materially assists in keeping the teeth free from this kind of food residue; hence being an important agent in mouth sanitation. It appears likely that this enzyme also assists in regulating the growth and development of the microorganisms normal to the mouth cavity and, as a natural corollary, we may suppose that, with a deficiency of this ferment, the development of foreign microorganisms may be encouraged. The limited tests made would indicate that the parenteral introduction of the pyorrheal vaccine, to which a small amount of the ptyalin is added, results in the activation of the normal constructive cell ferments of the cells of the vaccine.

Cellular Findings in Pyorrhea

The following body cells appear in the mouth cavity in pyorrhea alveolaris:

1. Mononuclear Leucocytes.—These measure from 13 to 15 microns in diameter and are uniformly spherical in form with the characteristic hyaline spherical nucleus which always occupies an excentric position. Septating forms are fairly common. The plasmic contents vary from coarsely granular, the granules in violent Brownian motion, to finely granular and almost completely hyaline. Abundant bacteria may be seen clinging to the exterior and occasionally bacteria occur within the plasmic contents where they undergo rapid lysis. The end change of these cells is disintegration coincident with a reduction of the nucleus and dissolution of the limiting membrane and scattering of the granular contents which

may be present. Some of the cells are without a nucleus and such cells are usually quite hyaline in appearance. The cells have a phagocytic as well as lytic action on bacteria, apparently showing a preference for the smaller bacillar forms, although they are also active against the *Vibrio buccalis*.

2. Polynuclear Leucocytes.—Like the mononuclears, but smaller, with from two to four and occasionally five, small excentrically placed nuclei, which nuclei are granular. These cells have been mistaken for polynuclear entamebas.

3. Granular Microblasts.—Minute irregularly outlined, granular cells with from three to four and five excentric nuclei. Some are devoid of nuclei. They measure from 5 to 10 microns in diameter. The margins are often ragged, apparently due to adhering bacteria. They are probably disintegrating polynuclear leucocytes.

4. Epithelial Cells.—These occur in great profusion derived from tongue, buccal membranes and the mouth cavity generally. The younger embryonic cells are coated with bacteria externally with some bacteria in the plasmic contents. As the cells grow older, they apparently gain in lytic action with corresponding reduction in the phagocytic power and such cells are uniformly hyaline in appearance. Gradually the nuclei become reduced and may disappear completely, apparently due to the action of the cell lysins. Gradually the old and dying epithelial cells become invaded by bacteria (especially the staphylococcus forms and also the spirochetes) and by and by the cell is displaced by a colony of staphylococci, which explains the occurrence of these small colonies in the mouth cavity, especially upon the dorsum of the tongue.

5. Erythrocytes.—These appear in the night mouth secretions of those suffering from pyorrhea, especially in the advanced stages of this disease, giving the expectorated saliva of distinctly reddish tinge. These cells are derived from minute ruptured capillaries.

Polymorphonuclear leucocytes are not present in uncomplicated pyorrhea alveolaris. Some of the embryonic epithelial cells undergo septation. The exact source of the leucocytes was not determined, though the indications are that they are derived from the capillaries by diapedesis. In pyorrhea complicated by the presence of Vincent's spirochete and the fusiform bacillus, the mononuclear leucocytes as well as epithelial cells occur in large numbers.

[To be concluded.]

What Others are Doing

VERATRUM IN ECLAMPSIA

Allison (*Texas State Jour. of Med.*, Feb., 1921) reports two eclampsia cases, which terminated in recovery.

The first occurred in a woman of 18, multipara, who gave birth to a child without the attendance of a physician. Two unusual features presented. The woman had a great number of convulsions, probably 150 in less than forty-eight hours. And, lactation began two months afterward.

As to the second case: two convulsions occurred before the uterus was emptied, which is also quite remarkable; also, there was a lapse of more than ninety hours between those and the next set of convulsions, five in number, all coming within a six-hour period. About this time, the patient became delirious and continued so for two days.

The treatment included tincture of veratrum, 15 minims, hypodermically, every three hours; magnesium sulphate, a half-ounce every hour for six doses; morphine, grain $\frac{1}{4}$, when the patient became delirious.

It is suggested that veratrine hydrochloride be employed instead of the tincture, because commercially it is more reliable and, therapeutically, in hypodermic tablets, it is better adapted for injection.

LEAD IN THE URINE

Is chronic lead poisoning, or plumbism, prevalent enough to warrant suspicion in neuroses taken as they come? McDonald (*Boston Med. & Surg. Jour.*, Nov. 4, 1920) thinks it is. The dozen or so cases which he reports indicated that this form of metallic poisoning is by no means confined to the acute variety common in lead workers.

In most of his cases, the drinking water was found to be the source of the trouble, the examination of water from the house tap showing from 0.0035 to 0.566 milligram of lead per liter. When pure water

was substituted and other indicated treatment followed out, improvement took place in nearly every instance.

Not one of these patients showed the usual objective signs of plumbism, such as a lead-line, anemia or stippling. It was only by making a urine examination that lead was disclosed as the direct offender. Such examinations showed as much as 0.026 milligram of lead per liter of urine.

RECTAL EXAMINATION IN OBSTETRICS

Do vaginal examinations in all cases before resorting to operative interference, advises Morton (*Texas State Jour. of Med.*, Feb., 1921), but keep out of the vagina above all during labor, except when absolutely necessary. The habit of indiscriminate intrusion is bad and far too common.

In a large majority of cases, rectal examination in lieu of vaginal, along with abdominal palpation, will usually suffice to convey all the facts one should know prior to delivery. A simple working expedient is given. The author carries with him two pairs of gloves, all turned for the right hand, powdered and wrapped in a clean towel. When called quickly to see a maternity case, he has the gloves ready to slip on. They can be boiled in the office as used, when time permits.

The first thing to be noted is the cervix. It is felt, as per vaginam, a thickened ring with a soft center. As it continues to dilate and thins out, it becomes increasingly difficult to determine; but the sense of touch improves with practice. The presenting part, if well engaged, will be felt as seemingly resting upon the rectum. If not engaged in the pelvis, the findings will be negative. Sweeping the fingers gently upward and around the pelvis, a sense of vacancy will impress one; this indication that the presenting part is not engaged may be verified by abdominal palpation. By rectal touch, also, the progress of a

pregnancy can be noted; but if abnormal, palpation per vaginam will have to be resorted to.

Fractures of the coccyx-ischial spines, after difficult forceps operations, can be detected by rectal palpation.

IODINE AND THE THYROID

Barr (*Prescriber*, June, 1921) reminds us that the thyroid gland functionates properly only when iodine is amply in store; when it is used and not replenished, its colloid material is absorbed and the degenerate parenchyma is replaced by fibroid tissue. The fibrocystic goiter has its origin in this manner. Iodine by mouth is the remedy called for, with or without small doses of a desiccated glandular preparation.

The large nodular masses in the breast, perhaps more common in single than married women, are often readily dispersed by iodine and thyroid substance.

Adenoids are conceived to arise from an imperfect natural attempt to compensate for defective thyroid action. Their formation is preceded by a catarrhal condition and an increase of lymphoid tissue within the air passages, with mouth-breathing and the other characteristic symptoms following. The indicated treatment is iodine, thyroid, iodide of calcium, syrup of the iodide of iron and cod-liver oil. (A compound of iodine and calcium, carrying 15 percent of the halogen, is put out by an American laboratory. It appears to be assimilable to an unusual degree. The thought comes that it should be excellent in this connection).

For people of advanced years, iodine and desiccated thyroid are often well advised. But, usually, the lime intake for them is to be reduced rather than augmented, by use of decalcifying agents and dietary restrictions. When enlargement of the prostate shows, such treatment is all the more needed and may be the means of averting further trouble. The author looks upon the large prostate as being analogous to the fibroid goitre, associated as the latter is with defective thyroid function. If the bladder is very irritable and there are frequent calls to micturate, aconitine is valuable; it may be combined with a small grainage of atropine. If the expulsive power be diminished, pilocarpine is an excellent remedy provided it does not unduly increase the irritability.

When cystitis has set in, the popular remedy is hexamethylenamine along with the acid phosphate of sodium.

HERNIA IN THE AGED

It is natural in the aged, with the wear and tear and the histological changes coming with senility, and the coincidence (so often) of bronchitis, that strangulated hernia is a potential danger for such people.

The mortality may be reduced by recognizing the condition early, by refraining needlessly from manipulating the mass, and by operating under local anesthesia.

Operation under local anesthesia is one of the really good revelations in modern surgery that can not be too warmly recommended. It eliminates much of the risk incurred when a general anesthetic is used, whether for this or other types of intestinal obstruction.

Field (*Boston Med. & Surg. Jour.*, April 1921) uses a 0.5-percent procaine solution, which he first injects into the skin and subcutaneous tissues in the line of incision proposed, then deeper or underneath the external ring. After waiting a few minutes, the incision is carried down to the external oblique. This structure is carefully opened near the internal ring and the flap raised, exposing the ilioinguinal nerve which lies on the internal oblique muscle. This nerve is at once blocked by injecting a small quantity of the anesthetic into it, which immediately turns the nerve white. Next, the iliohypogastric nerve is blocked; then the genitocrural; and, finally, a little procaine is injected to render the parietal peritoneum insensitive.

The technic just described is for hernia of the inguinal type. In the case of femoral hernia, the technic is simpler. Anesthesia satisfactory for this operation may be induced by infiltration.

ANESTHESIA WITH THE NEEDLE

Are not many patients driven to the quacks by insistence on the part of the regular physician, against the will of the patient, that a prospective operation be done under general anesthesia? It seems probable.

The question, which at least is worth pondering, is suggested by the advice given by Labat (*Bull. Chicago Med. Soc.*, June

11, 1921) that inhalation narcosis be displaced so far as possible by regional anesthesia. A good knowledge of anatomy and of the surgical technic is naturally necessary. But the rewards of study and experience are bounteous. Surely, it is something to refrain from resorting to a general anesthetic when one or two injections, judiciously made, suffice to render the operation painless, while at the same time subjecting the patient to the least hazard. Procaine is the local anesthetic of choice. It should be pure and sterile, especially when it is to be used intraspinally. In the latter case, a dose of 0.01 Gram for each 15 pounds of body weight, injected very slowly, should be safe for any operation below the diaphragm.

PROCAINE IN NOSE AND THROAT WORK

Otrick (*J. A. M. A.*, Feb. 26, 1921) recommends the use of pituitary solution in combination with procaine for operations on the nose, throat and mouth, where they can be done under local anesthesia. He employs pituitary solution in obstetric strength (20-percent) in the proportion of 1 mil to 5 mils of 2-percent procaine solution.

He prefers pituitary solution to adrenalin because the action, once effected, lasts longer; which is proved by taking the blood pressure curve after the injection. The longer period of vasoconstriction gives a better chance for the organization of the clot. The slowly-passing effect and the slow return to normal, of the small vessels, gives the clot a better chance for further fibrination. There is less likelihood of secondary bleedings.

ACRIFLAVINE AS A URINARY ANTISEPTIC

Given to normal persons by mouth, in doses ranging from 0.1 to 0.5 Grams, acriflavine is excreted in the urine in sufficient concentration to render the voiding unfit as a cultured medium for the colon bacillus and staphylococcus, provided the reaction of the urine is alkaline. This is found by Davis (*Jour. of Urology*, March, 1921) to be so without question. The effect is inconstantly obtained in acid urine. It shows about two hours after ingestion of the drug, and lasts for at least eight hours.

Control samples of urine, taken before ingestion and twenty-four hours after, uniformly permitted a profuse growth of the organisms named.

The largest dose that may safely be given has not yet been determined, but rabbits have survived, with no apparent ill-effect, a daily dose of 0.025 Gram for a month. This is about half the actual anti-sepsis-producing dose given to persons with seeming impunity.

The underlying cause of a urinary infection must be corrected; such as stone tumor or retention. Else no agent given orally can warrantably be looked to for satisfactory results. Also, one must choose his material with caution, accepting only the genuine and refined drug.

OPERATIONS UNDER PROCAINE

Grant (*Antiseptic*, May, 1921) thinks operators should resort less to general and oftener to regional anesthesia. By so doing, the hazards might be reduced and patients saved who now succumb. It has been stressed elsewhere that the mortality after operations on the prostate is very much higher when ether or chloroform, or both, are used for obtaining narcosis. The elderly, who come in preponderantly for this operation, do not bear these anesthetics well.

The author reviews the various agents which have been proposed for obtunding a prospective site for operation: cocaine, stovaine, holocaine, apothaine, and others. All have their merits; but the one approaching most closely the ideal appears to be procaine (or novocaine, as the German product was called in prewar days). This agent was discovered by Einhorn, in 1905. It is a synthetic, or laboratory-made substance; is soluble in water; may be heated without decomposing but not too long or often; although fairly stable in solutions kept in stoppered containers, it is decomposed by even a trace of alkali. This should be remembered by those accustomed to using alkali salts for cleansing or sterilizing their syringes.

Grant has used 100 mils (Cc.) of a 0.5 percent solution without any mishap resulting or the patient showing the slightest sign of being adversely affected by it. One case is cited in which as much as 200 mils was used; it was an excision operation for

removal of a cyst. The patient was unharmed. Procaine is the best anesthetic for urethral work, by reason of its relatively low or slight toxicity.

MORPHINE IN LABOR

A large number of patients, taken as they come, but most of them primiparous, and some being cases of malpresentation, were recently delivered by McIlroy, in the General Hospital, at Constantinople. Morphine was given hypodermically to all, injections being made into the upper arm; the initial dose was 1/6 grain and repeated doses of from 1/6 grain to 1/2 grain were given at varying intervals during labor, according to the condition of the patient and her capacity for bearing pain.

No excitement was observed; the women slept at intervals and awakened refreshed. The uterine contractions showed only temporary diminution and the progress of the labor was found to be rather hastened than delayed. In fact, it was used in some of the cases not so much to subdue the pain as to shorten labor. In all instances, restlessness was diminished; the third stage was unaffected; no apparent harm was done to the child. Nor was postpartum hemorrhage observed. There was less fatigue than usual. Absence of shock permitted a favorable convalescence after labor.

It is the practice of the author to combine morphine 1/4 grain, with sodium bromide, 30 grains, and to give this dose to primiparous patients every four hours, beginning with the labor pains. But, better still is the combination of morphine with hyoscine and cactin, according to many users. This is a very practical means for bringing about that condition in labor known as twilight sleep.

SALIGENIN AS A LOCAL ANESTHETIC

Hirschfelder (*J. A. M. A.*, Dec. 25, 1920), with some others in this country, is pleased with saligenin as a means of producing surface anesthesia. It is said to be fully as effective as cocaine and to have the great advantage of a toxicity so low that solutions can be injected quite freely into a body cavity, such as the bladder, without fear of mishap.

It has served nicely in cystoscopy, in the

outpatient service of the Minnesota University. For this, 2 mils of a 4-percent solution is injected into the urethra, a pledget of absorbent cotton soaked in the same solution being placed over the external urethral meatus for five minutes. Another use for saligenin is after catheterization. A considerable quantity can be injected directly into the bladder. It reduces the spasm so effectively, it is said, that an examination can be made immediately afterward.

Clinically, this agent is a phenyl carbinol. It is also known as salicyl alcohol. The white crystalline powder, in which it occurs, has a faintly aromatic odor; it is permanent in the air; and soluble in water, in alcohol, and in various oils. As strong a solution as 12-percent may be used with impunity according to advises current; in this strength, a decidedly benumbing effect is noted.

DO YOU KNOW TYPHUS WHEN YOU SEE IT?

In this country, typhus fever threatens only rarely; but, even so, a sporadic case now and then bobs up in the larger cities. Because of its infrequency, many doctors have never seen a case in the course of the longest experience; the symptoms studied from the textbooks, in college, have usually passed out of memory; and so it happens that the disease, when it obtrudes unexpected, is not always recognized. For this reason, it will profit us briefly to review the clinical picture.

It is not only that failure to recognize so serious a disease may put the doctor in an embarrassing position; the worst is, that a community outbreak may result from failure to immediately isolate the patient.

First of all, one should know that the body louse is the agency of transmission; also, that it takes from four to twelve days for the disease to develop in a person who has acquired the infection.

The actual onset of the disease is sudden, beginning with a frontal headache of unusual severity. There may be a chill or not, but always there is an elevation of temperature, which remains quite constant. It may reach 104 to 105 degrees from the second to the fourth day and remain high to the end. The face is flushed, the eyes suffused, the respiration quickened; the patient complains of great weakness. He

is usually drowsy and dull, and may become delirious. A rash appears on the fourth day or the fifth, consisting of macules, which appear first on the abdomen and later on the chest, arms and legs. These macular spots may become petechial.

Aside from the symptomatology, it is important to uncover the fact that the patient is a recently arrived immigrant, probably from a port known to be typhus-infected, or that he has mingled at the docks as a longshoresman or other employee, or again has served aboard ship as one of the crew coming in contact with steerage passengers. Also, the finding of vermin in the person's clothing, or scratch marks upon the body, lend material for a diagnosis.

CINCHOPHEN IN RHEUMATOID CONDITIONS

A number of cases treated with cinchophen are reported by Hanzlik and collaborators (*J.A.M.A.*, June 18, 1921). Seven patients, given 10 to 13 Gms., in doses of 1 Gram (15 grs.) every hour, were completely relieved of the subjective and objective symptoms. In most, the febrile temperatures were promptly lowered to subnormal levels but later returned to practically permanent normal levels. All showed evidences of marked diaphoresis before full relief was obtained.

To determine what degree of relief might be had from minimal doses, from 3 to 6 Grams, in divided doses, was administered. From such doses, amelioration of the symptoms followed, to wit, an increased sense of well-being, falling temperature, lessened pain and improvement in point of mobility. An increase of the dosage to 10 Grams (total) did not appreciably add to the benefits. But complete relief followed an increase to 10 to 13 Grams (total). With that, the patients could move their joints freely without pain; tenderness was absent; fever had practically disappeared and the temperature became subnormal; diaphoresis was marked; some of the patients attempted to walk and the majority gratefully acknowledged subjective relief from all distressing symptoms.

The results indicated that the drug ought to be given intensively or in large doses. More or less salicylism was observed in 65 percent of the cases (although, in justice to the drug, it must be added that sodium

bicarbonate was not given conjointly as recommended) and it is asserted that cinchophen is somewhat irritant to the renal tissues. However, such collateral effects are less pronounced, when they do occur, than with the salicylates under similar conditions. As to albuminuria, when this occurs, it is certainly far less noticeable than that caused by corresponding doses of sodium salicylate.

In another series of three patients, novaspirin was given, but complete relief was not obtained till cinchophen was substituted for that drug.

READING ENDOCRINE FAULTS

The fact in biology is recalled by Kaplan (*New York Med. Jour.*, April 20, 1921) that the male goldfish, at the height of spawning, develops a crop of pimples on the cheeks. This condition is equivalent to pubescent acne in the human. But, it presents in the human female as well. At the menstrual period, certain women show a small pustule, usually on the left side of the chin near the angle of the mouth; or a crop of pustules, at times encroaching on the lips and popularly classified with "cold-sores." Although a female so affected may prove satisfactory as a wife, her gonadal apparatus is seen to be more or less imperfect, by this token.

A second biological observation aids us in determining a glandular fault, namely the fact that the skin of the water toad contains a blood pressure principle capable of action in extreme dilution. Similar dark cell deposits (melanoblasts) occur in the skin of certain people in the course of adrenal inadequacy, as those suffering from Addison's disease where the condition extends to one of bronzing of the entire body surface. In others, it takes the form of pigmented spots variously located. The assumption is that the adrenal medulla is not working properly and the organism, in order to get the necessary quantum of pressor principle to sustain life, resorts to chromaffin-cell multiplication to the point where such cells become distinctly visible; chromaffin cells yield a substance almost identical with the adrenal hormone.

As a practical application of this idea, Kaplan advises the administration of epinephrin, or adrenal substance, to a dark-complexioned child with diphtheria, particularly

when a Sergent line can be elicited; also to typhoid or influenza patients, in whom these infections tend to cripple the suprarenal apparatus.

He believes the tonsil, pituitary gland and appendix to be functionally related and empirically has found that a pituitary extractive relieves the gaseous eructations and abdominal cramps following tonsillectomies; also the supraorbital headaches in operated persons.

A meagre supply of adrenal secretion permits gastric (hydrochloric) acid to be formed in undue quantities, producing heartburn and gastralgia. Hence, the benefit often to be had from medicinal doses of a glandular preparation supplying the adrenal hormone.

POLLEN EXTRACT FOR HAYFEVER

Walker (*Arch. Int. Med.*, July 15, 1921) says that the pollen of ragweed (dwarf variety) virtually always is the cause of late hayfever, meaning hayfever occurring in the months of August and September, sometimes referred to as the autumnal type. This is true of most localities.

Hence, the antigenic agent most often and certainly useful is one prepared from this weed. He sees little merit in mixed pollen therapy in which the pollen of various grasses is utilized; in his hands, preparations of this class have proved inefficacious. For those numerous patients whose woe begins early in August or thereafter, a pollen extract prepared from ragweed will usually suffice; if the trouble commences earlier, an antigen from timothy may be used conjointly.

Satisfactory preseasonal treatment, he concludes, yields excellent results in hayfever. By satisfactory treatment, he means at least five or six injections of a properly prepared pollen extract.

POSTDIPHTHERITIC PARALYSIS; A CURE

Hallock (*New York Med. Jour.*, April 20, 1921) reports a case of postdiphtheritic paralysis, in which symptoms appeared about three months after the acute illness. The patient was an adult, fifty years old. Antitoxin was advised by the physician in attendance who would have administered it at his next visit had not a blizzard inter-

fered by blocking the roads for a week. In the meanwhile, the patient was dangerously ill, having the characteristic fever and other symptoms of the disease at its worst. However, he recovered without antitoxin having been administered.

Weakness of arms and legs, until the patient was unable to move about, were the first signs of the trouble. On showing, strychnine was at once administered by hypodermic injection, continued to beginning toxicity and maintained just below the danger point, as evidenced by insomnia, nervous irritability and vasomotor disturbances. Massage and passive motion were practiced daily.

In ten days, the patient was able to sit up in bed and make coarse movements of the arms and legs; but, not until sixteen days had elapsed, was he able to grasp a fork in his hand and bear weight upon his feet without toppling over. On the twenty-third day, symptoms of strychnine poisoning appeared. On the twenty-fourth day, the patient first walked without crutches. Reflexes had returned by this time, but general bodily strength was far below normal. In five months, however, he was again in excellent health.

The author takes the reasonable view that antitoxin is not indicated in paralysis after toxin-production has ceased, as in this case.

GONORRHEA TREATED WITH VACCINES

Reviewing the work done clinically by a number of physicians of large experience in the use of vaccines, applied to gonorrhea, Townsend concludes that a gonococcus vaccine is valueless in the treatment of acute cases. But, in chronic cases, in the sequelæ of the infection, such agents are useful as adjuvants to standardized treatment and not as specifics.

In other words, too much reliance is not to be placed on vaccines; they must not be used to the exclusion of all other medication. Patients must be treated locally, with injections or irrigations, as well as biologically. Locally, acriflavine may be tried, in alternation with a silver colloidal preparation or not. Many users appraise it highly. If highly acid, the urine must be alkalinized and attention to the diet is required.

Let's Talk it Over

Ex Commentario Medici

[Concluded from July issue, p. 464.]

Belle Webster

Some years ago, our little city experienced the thrills and throes of what might be termed a boom, one of the innovations of the period being Belle Webster, a striking blonde who came down from Chicago and established her little table in a corner of the Palace Barber Shop, in front of a neat little sign—Manicure. Belle certainly had a way with the men that gained much patronage and many admirers. She was popular, and prudent if not prudish. The line between friendship and familiarity was pointed out to all quickly and definitely, either with tact or with vigor, as the case seemed to require.

Judson Brown was one of our most confirmed and impervious bachelors. Rustic, middle-aged, artless of women, his wealth made him the objective of many feminine strategies foredoomed to failure because of faulty tactics. For, Judson, while alert to the first timid call of a profitable investment, was bashful and slow to apprehend the tentative overtures of our local maidens. Belle's methods were direct and forceful. Before her intentions were generally known, Judson was too deeply involved to withdraw; in fact, he was ardently in love, with no desire to withdraw. Contrary to all predictions, she remained as attentive and as zealous after their marriage as she had been in her raid on his celibacy. She introduced him to a new and an enchanted world, pervaded with lofty visions but consecrated to the divinity of love, which he accepted in good faith as the logical result of a perfect soul-union.

My professional interest in the matter commenced some six months after the wedding. Judson came in one evening with a severe headache. He had been living

high, gaining about five pounds a month, to the delight of his friends and the chagrin of many women who predicted much unhappiness. He admitted some difficulty in breathing, was often dizzy and could feel a pounding in his head and neck on lying down. But, to him, these were trivial things. His great concern was for Belle who possessed the combined virtues of the ideal wife, mother, sweetheart and friend. She claimed to feel well but could not sleep, was working herself to death over him, preparing the most wonderful feasts which she scarcely tasted, had a silly fear of growing stout. I wrote out a complete diet, giving it to Belle the next day, with some rather pointed advice which she promised to observe. The matter slipped my mind for a few weeks, when I learned that she was avoiding virtually all the things recommended, while finding even more attractive ways of preparing the forbidden articles. And Judson was racing through the usual stages and manifestations of chronic food-poisoning.

About this time, it first occurred to me that possibly there might be another side to this peculiar case. Stupidity or weakness must be carried beyond the point of reason to account for Judson's condition in the face of ample advice and warning. Belle was neither weak nor stupid, and a dietitian would find it difficult to advise a diet more certainly harmful than the one she persisted in giving her husband. Cautious inquiries in the neighborhood revealed nothing but praise for a devoted wife, half crazed with anxiety. But I had a vague, intangible, perhaps absurd feeling that something was wrong; which remains to this day. Judson died a few weeks later, the immediate cause being, acute dilation of the heart. Autopsy was refused, although it is doubtful if an examination would have revealed anything of impor-

tance. Shortly after the funeral, it was learned that, in his will, he left everything to Belle, amounting to some eighty thousand dollars. She lost no time in securing the cash. In a month she was gone. She refused to speak to me after his death, probably hearing of some remark I may have made. I saw her last the day she left. The bold and deliberate wink she then gave me confirmed the suspicion already formed that I had assisted to some extent in a deliberate murder.

Jennie Lund

One night after office hours, while meditating over the affairs of the day, with feet resting on a corner of the desk and my favorite pipe gurgling softly, there came a timid rap at the door, the kind of rap that announces a reluctant caller or an assignation. My visitor proved to be Jennie Lund, a shy, attractive girl of fifteen whom I recalled as having recently left school and gone to work in the Emporium. Her father, Adolph, left considerable property and some insurance, but, unfortunately, none of it fell to Jennie and the woman who gave her birth considered that by so doing she had fulfilled all of her obligations.

It required no end of patience and encouragement to get her story, disconnected, incoherent, saturated with tears. She was sick, knew she would die and wanted to, could not sleep and was throwing up her breakfast every morning. The same old fatuous tragedy that has been running continuously since Adam first met his mate, playing obdurately to empty seats and darkened houses with occasionally a discreet chorus in the epilogue, although often rehearsing to crowded houses. The case was not unusual nor of professional interest except in the dénouement over which I have spent considerable time in agreeable reflection.

A brief note to young Stein brought him to my office, early the next day; smug, impudent and blustering but, ten minutes was sufficient to impress him with the gravity of the situation. He left with an eager request for assistance which I promised him on his return at four o'clock. I then called on Mrs. Lund in whom the instinct of propagation is lively enough but that of motherhood totally wanting. As was to be expected, the interview was dramatic,

culminating in a poorly simulated attack of hysteria. For over twenty years, I have held the belief that, in selected cases, cold water in massive doses should prove an effective remedy. The occasion for a trial seemed opportune, so, I gave her a bucket-full and with the happiest results, although it required some time to re-establish myself in her good graces. She agreed to bring Jennie to the office at four o'clock, and, as Judge Henson happened along; providentially at that hour, the arrival of Stein set the stage for a wedding. Young Stein was doubtless more fervent as a lover than as a groom. However, to do him justice, the circumstances were not such as to inspire enthusiasm. He stood literally between several devils and the deep sea of matrimony, with no time for indecision. It was a cold plunge taken with fairly good grace and, I trust, without regret, although old Aaron Stein avowed he would have the marriage annulled if it cost him the Emporium.

Jennie Stein

Last night, Jennie was delivered of a fine, healthy, eight-pound baby boy, about five weeks premature in deference to those gifted with a memory for dates. Old Aaron Stein was orthodox, boasting a lineage untainted with Christian blood. So, when his only son Frank married Jennie Lund, hurriedly, he cast him out and swore he would disinherit him. However, after a few days, the storm abated and Frank retained his position in the Emporium, although the sight of Jennie has been known to threaten the old man with a stroke. When I rang him up, last night, before leaving the house, and asked permission to introduce a grandson, Aaron Stein, Jr., age thirty minutes, the announcement was greeted with a burst of gutturals of which I could only catch the words, "Lieber Gott." But, when I called this morning, old Aaron was sitting by the bed holding Jennie's hand. The house seemed to have an atmosphere of peace and happiness that I had not observed previously, even the cat showing his friendliness by jumping on my knee and purring contentedly.

Mary Graham

Mary came slinking into the office last night to have her eye dressed, claiming

she fell against the stove. The last time, just two weeks ago, in fact, she was splitting wood and a piece struck her on the lip. And once before, she said she fell against the door-jam. I recall still another time when one of the children accidentally hit her with an apple. Strange that these things always happen on Saturday night, when Steve draws his pay and lingers an hour or so at Schmidt's on the way home. But, stranger yet is the patience and loyalty of some woman.

Anson Riggs

Anson was a retired farmer who, by some means unknown to me, became addicted to the use of opium. I learned of his affliction several years ago, from his former physician, which enabled me to afford him some relief when called during one of his crises. But, none of his numerous family were aware of the cause of his illness and I was pledged not to enlighten them. So, they were at times no less mystified than alarmed and insisted on consultation. Anson was known to be wealthy, his peculiar ailment was a matter of common knowledge and inspired much well meant but misguided effort in his behalf. After the local profession was exhausted, the county was drawn upon, then the state and, finally, anyone with a remedy for spells was welcome, which brought to light an amazing variety of cures and a queer procession of the *genus medicum* intent on trying their hands on old Anson. I met many of them, less as consultant than neophyte, but found not one who knew or apparently suspected the cause of his illness. I recall the celebrated author of a well known textbook, the etiquette of the elaborate formalities, the dramatic entrance into the sick room. The technic of his masterly approach gave us a thrill of admiration. He fixed Anson with his keen eyes for a moment, asked him seven curt questions, tapped him twice on the knee and stalked out with fifty dollars and a request for a Wassermann "merely to confirm the diagnosis." Then, there was the Miracle Man from St. Paul, a seedy individual with mournful air and sonorous voice who divined that Anson's ego was suppressing certain emanations with resulting tension of vital fluids which he proposed to free by induction. Even skeptical old Anson was impressed until the healer laid a cold

hand on his abdomen. The yell that followed cut short the noxious effluence and Anson was doomed to further trials. Between these extremes, were many types of men and doctors, many to admire and emulate, others to ignore and some to pity or distrust. Anson lived his allotted three score and ten less a few months, passing to his reward this morning. There is authority for the belief that he had a number of diseases, although I still hold to the diagnosis of chronic nephritis.

H. C. D.

WISCONSIN HOME-COMING

The State Medical Society of Wisconsin will celebrate its seventy-fifth birthday by holding a "Home-Coming" meeting in Milwaukee, September 7, 8 and 9, 1921. All former Wisconsin men, whether they have practiced there or left Wisconsin to study medicine, practicing elsewhere after graduating, are invited to this home-coming.

The officers of the society are anxious to secure at this time for mailing purposes the names of all former Wisconsin men. You will confer a favor by sending names and addresses to Dr. Rock Sleysser, Secretary, Wauwatosa, Wisconsin.

IN MEMORIAM: DR. ABBOTT AND DR. BUTLER

I wish to express my sympathy to you and to The Abbott Laboratories at the loss of your associate and friend, Doctor Abbott.

I have had the pleasure of knowing Doctor Abbott intimately ever since I was a boy and during that time have come in contact with him in a business as well as a personal way.

To have known him was a great privilege and his memory will ever be one of the cherished things of my life.

Many a time, during his recent illness, he has stopped in at my office for a chat and each time I have gleaned not only helpful suggestions, but an intangible something from that part of his nature which made him beloved by all who knew him. His personality was an incentive for good.

G. D. Searle, M. D.

Chicago, Ill.

I am profoundly grieved at the announcement of the passing of Dr. Geo. Butler.

While I never had the pleasure of his

personal acquaintance, I have always read his writings with pleasure. In all my acquaintance, I never have met one who had such a full mastery of the mother tongue. His writings were pure English—beautifully spoken. It takes a long time for such a man to develop and the world is the loser when such as he is taken away.

The memory of such a man grows greener as the years go by.

C. S. COPE.

Tacoma, Wash.

On my return from a Southern trip, I learn of the death of Dr. Abbott. This, following so soon after that of Dr. Butler, is indeed a grievous blow to your CLINIC family.

With the accumulating years, I had come to regard these men more and more as "friends in my heart," waiting each month for some words of helpful suggestion and inspiration that always came to lighten the grind of daily practice.

As a practitioner of about their own age, interested in keeping still young and efficient, I am concerned to know what from a physical standpoint, handicapped these bright men who taught us so much about "Health and Human Adjustment." They seemed themselves destined, as we fondly hoped and believed, to round out their full measure of years as did, for instance, the late Dr. A. Jacobi, giving to the world fifteen or twenty more years of splendid achievements, but:

"We live in deeds not years; in thoughts,
not breaths,
In feelings, not in figures on the dial.
We should count time by heart throbs.
He most lives
Who thinks most, feels noblest, acts the
best."

This they did and, while we bow to the inevitable and say a lasting tribute of honor to their memory, we can renew our fealty to the cause they represented and pray that a "double portion of their spirit" may be vouchsafed to you who remain on the staff to "carry on" to still greater heights of attainment.

A. W. BLUNT.

Clinton, Iowa.

I had just come from my 1015th maternity case, without a death among my mothers, feeling fine, and was handed a personal let-

ter from Beck (Seattle) telling me that W. C. Abbott died July 4.

I wondered, if he could have seen that poor, tortured mother of four, with her humped back and active tuberculous sinus, crawl to that bed to welcome a fifth, as I did, and slip away into dreamland to awaken long after I had left, to welcome the babe whose coming had caused no physical pain, what he would have said.

It comes to few men, as it did to Doctor Abbott, to achieve in the short period of mortal activity a personal momentum which will vibrate his profession as long as alkaloids are used to alleviate the ills of man or beast.

Diplomacy, war, music, art, poetry, philosophy and religion, each has its roll of honored immortals. Electricity has its Edison; Drug Therapy, its Abbott.

Had Abbott brought forward only "Calcicidin" (iodized calcium) he would merit a niche in the hall of fame; for, thousands of living adults, adolescents and babes would have been filling untimely graves to the credit of croup but for iodized calcium.

"Jugulate," "Definite Medication," "Clean Out and Keep Clean," are his living epitaphs.

What sculptor, painter or biographer can picture Abbott? Would it be a Samaritan at the gateway of Travail in the Bridal Trail to the Garden of Babyland?

You, at headquarters, are not alone in appreciating the force W. C. Abbott was, in driving a medical truth home and right up to the bedside.

ALBERT A. DAVIS.

Port Angeles, Wash.

I can not deprive myself of the sorrowful pleasure to say a few words relative to the passing of two men who were potent factors in medical progress during the last two decades.

These were Drs. Wallace C. Abbott and Geo. F. Butler, who were fruitful contributors to CLINICAL MEDICINE as well as many other medical publications. Not only were they in the van in many things, but both were remarkable to help out so many of our weaker brethren, in their numerous medical worries, that dotted the nooks and corners of the United States working out their missions as the Weel'um McClures in the less desirable ways and by-ways.

Of Abbott, my old friend, I know noth-

ing that characterizes him so well as to repeat what the poet Whittier said of himself in his poem, "The Tent on the Beach."

And once there was a dreamer born,
Who, with a mission to fulfill,
Had left the muses' haunts, to turn
The crank of an opinion mill.

So, with my dear old friend. His enemies, most of them born of ignorance, said he was a dreamer. They did not know that the inventor, the artist, the historian, the novelist, the poet and the seer, aye, all of them must first have dreams, then execute. Those dreams will become the realities which are for the benefit of mankind.

Abbott did not have time to strike back, he just worked and produced. His enemies became his friends and, at the time of his all-too-early demise, he had no enemies barring perhaps the few who did not know him.

True, many things he taught were often called heresies; still, he had the pleasure to see most of them accepted and they are now common knowledge.

There need but little be said about Butler that is not also true of his friend Abbott. Like him, Doctor Butler was a tireless worker. His articles were eagerly sought by many publishers for their lucidness and good sense. Yet, with all his popularity as a writer and scholar, he was modesty itself. When I met him last in Chicago, but a few months before his death, I little dreamed that he was to be called so soon, as he seemed to be in his usual cheerful mood, "pegging away" as he called his work.

May the Powers that brought him hither be kind to him and take him where the lotus blooms and where he may have the companionship of Earth's great and good.

C. F. WAHRER.

Fort Madison, Iowa.

[During Doctor Abbott's illness, the subjoined letter to him was received, among many others. The writer, Doctor W. S. Cline, is one of the old-time enthusiastic followers of the teachings of Waugh and Abbott. His letter is given, as it exemplifies the warm affection in which Doctor Abbott was held by practitioners throughout the country. Following it, are Doctor Cline's expressions of sorrow over the loss we all suffered.—ED.]

It is with sincere grief and sadness, I

hear through Doctor Burdick that you are not well. I have never met you, but always thought of you as a great man. I admired every line you ever wrote, and found by actual experience what you said was true. I wrote Dr. Waugh several times saying you were doing too much.

I cannot express my sorrow, when my niece, 216 E. 20th Street, Chicago, wrote me a card telling of Dr. Abbott's death. I wrote him only a few days before.

Forty years ago, I think, I wrote an article on typhoid fever, and he and Doctor Waugh both wrote to me. I was one of the first to advocate intestinal antiseptic treatment, but did not know it at the time. Fifty-six years ago, we did not know antiseptics. After that, our correspondence kept up. I never had a doubt when Abbott said that a thing was so. And, I never failed to get results from following his advice.

Now at my age, 77, I feel that I have lost my best friend. He overworked. I fear, and once I wrote asking him to let up.

W. S. CLINE.

Woodstock, W. Va.

Dr. Wallace Calvin Abbott

How with affection do we hold
Sacred his memory!
A friendly man, righteous and bold,
Warm in affection do we hold
His form of beauty, mind and mold,
Ever continually.
Yes, our affections warmly hold
Sacred his memory.

Dr. George F. Butler

This man by constant teaching gave
Our Art a great advance.
He did a higher standard wave
And by his work he ever gave
Ideas clear how best to save
And human life enhance.
And so by efforts skilled he gave
Medicine much advance.

Drs. Abbott and Butler

Oh, how we mourn their loss to know,
How gloomy seems the day!
And did we think we loved them so,
These men whose loss we mourn to know,
Who labored always to bestow
Light on the world's pathway?
Let hearts best mourn who did them know,
Gloom smites the broad mid-day!

JAS. A. DE MOSS.

Thayer, Kans.

THE COMPULSORY HEALTH INSURANCE IDEA APPLIED IN OTHER LINES OF WORK

The *R. and C. Medical Pocket Quarterly* is a mighty bright little journal with a personality and emanating from the offices of Reed and Carnrick, Jersey City, N. J.—primarily, of course, in the interest of the very excellent and well known products of this firm; but, also, for the entertainment, instruction and encouragement of physicians.

The latest issue (June) contains a playful suggestion for a bill to act as a fitting companion measure to compulsory health insurance legislation, which might impress proponents of that propaganda with the absurdity of what they are trying to do to physicians. We say it *might*. Only, unfortunately, it won't. The reason is, that these professional uplifters, reformers and, worse (meaning those who advocate compulsory health insurance because they have personal axes to grind for which they desire to get rid of the supervision of physicians) are so entirely devoid of any saving sense of humor and so absolutely lacking in the ability to think logically and to put themselves in the other fellow's place, that they can not conceive or understand the immeasurable harm that compulsory health insurance and similar measures would do, not only to a large and important class of the population (the medical profession) but inferentially and unavoidably to the population at large, or at least to its sick members.

It will be remembered that, last winter, compulsory health insurance bills were introduced in eight state legislatures, the passing of which as laws would compel physicians to furnish medical services at twenty-five to fifty cents a call to approximately twenty-five millions of the country's population employed in industrial pursuits. One of the readers of the *R. and C. Pocket Medical Quarterly* suggested a companion bill to these compulsory health insurance bills which is not any more nonsensical than are its prototypes. It it were enacted, however, and enforced as law—how those whom it strikes would howl and set up a roar (quite justly!) charging unfair and discriminating legislation. So it would be and so is compulsory health insurance legislation. The doctor's pro-

posed bill is in part as follows:

"Every physician, surgeon, or any person practicing the healing art, under any name, or title, shall be registered at the capitol of the State and the seat of the County in which he practices.

"Every physician, surgeon, etc., so registered shall be required to pay to the County Treasurer of the County in which he practices the sum of 25 cents per week, payable monthly, semi-annually, or annually, as he prefers, upon payment of which he is to receive from Secretary of State or some other officer to be determined, a Certificate that he is duly registered, etc. Also a card giving the physician's name, age, race, color, place of residence, married or single, and a Certificate that the holder of said card is a duly registered and licensed physician.

"Upon presentation of said card to any mechanic, machinist, plumber, automobile expert, electric light worker or blacksmith they shall make any and all repairs on any automobile, machine, water works, electric light fixture, washing machine, carpet sweeper, sewing machine, or any other work done by any automobile expert, mechanic, machinist, plumber, electric light worker, or blacksmith, and said automobile expert, mechanic, machinist, plumber, electric light worker, or blacksmith, and said automobile expert, mechanic, machinist, plumber and electric light worker or blacksmith shall be paid by the State from the funds provided by the payment of said physician, etc., at the rate of not more than 25 cents per hour.

"Further, every said automobile expert, mechanic, machinist, plumber and electric light worker or blacksmith shall be duly licensed by said State and shall be under the control of a Board to be appointed by the Governor of said state. Which said Board shall appoint a County Branch of not less than five members—two of which shall be physicians, etc., and any automobile expert, mechanic, machinist, plumber and electric light worker or blacksmith found putting more time on any work done at the order of said Board than actually necessary—and any automobile expert, mechanic, machinist, plumber and electric light worker or blacksmith found inefficient shall be deprived of his license.

"Any automobile expert, mechanic, machinist, plumber and electric light worker or blacksmith found doing any auto work, electric light work, machine work, plumbing or blacksmithing, without a license, shall be deemed guilty of a misdemeanor, and upon conviction shall be fined not less than \$25 nor more than \$100, or confined in the County Jail not less than 10 nor more than 90 days—or both, at the discretion of the Judge, and permanently deprived of his license as automobile expert, mechanic, machinist, plumber and electric light worker or blacksmith.

"This Law to be introduced as a companion to the Compulsory Health Insurance Measure. The *Quarterly* adds:

"In its provisions the above bill is no less

absurd than the Compulsory Health Insurance bills, to which the doctor offers it as a fit companion piece. The demand that electricians, plumbers and other workers give in turn their service to the physician at no higher fee than 25 cents an hour—reciprocating the favors bestowed—makes the shoe pinch. When the other fellow has to pass the hand out, he thinks differently—it is another story."

THE AMERICAN ASSOCIATION OF ORIFICIAL SURGEONS

The American Association of Orifical Surgeons will hold its thirty-fourth annual convention at the Lexington Hotel, Chicago, Illinois, on September 29, 30 and October 1, 1921.

The clinics will be held at the Jefferson Park Hospital, Chicago, each morning from eight to twelve o'clock.

We are endeavoring to make this the best clinic and meeting we have ever held.

Dr. W. E. Kinnett, President.

Peoria, Ill.

A CORRECTION

Dr. A. L. Nourse, of Anniston, Alabama, informs us that, in his article entitled "Arsphenamine and Near-Virgins" (CLIN. MED., July, p. 481, col. 2), an error occurred. Fortunately, this mistake was on the safe side in that the dose of a very powerful drug was given too small—better than if it had been too large. Still, we regret the mistake and ask you to remedy it at once.

In the paragraph starting "Given a diagnosis . . .," near the middle of the paragraph, "one-sixth grain of mercury cyanide" should read "six grains of mercury cyanide . . ."

Now, correct that, please, Doctor.

A GOOD LOCATION

Owing to my failing health, due to high blood pressure, I am leaving a wide country practice which has brought me about \$4,000 a year for the last three years.

Will take my successor about and introduce him for miles around, if he will come and relieve me of a few drugs and give me \$200 to get away with.

This is a proposition worth while. My nearest doctor is from 40 to 45 miles from me in three directions and seven miles in the fourth. The country is well settled by Americans and a few Germans. Roads good.

I am planning to leave here within six

weeks. The people want a good man. I believe it to be worth a thousand dollars to anybody to be made acquainted with the people; still, I only ask a nominal sum.

I have two small buildings which I occupy and, if they are not sold by the time a doctor reaches me, he can have them for \$500. They are on the market, however, and may be sold, one or both.

I court the strictest investigation in this matter. No doctor needs to be afraid of the expense of coming here to look into it. The business is here.

WM. COLLIER.

Perryton, Tex.

A GOOD LOCATION

Doctor, here is a crackerjack location for some hustling M. D. who wants to live in a Colorado mountain town where he can make good money. We have good schools, fine community, good climate, pure mountain water piped to your house, good auto roads. Practice now with \$4,000.00 per year. By doing some surgery, you can increase it materially.

R. H. PAXTON.

Westcliffe, Colo.

SOVIET COMMITTEES FOR ALL AMERICA

Boston, July 23, 1921.

To the Editor:

National peril inheres in the Sheppard Maternity bill. For the public welfare your attention is called to the following facts:

"Maternity Benefits" was written into the Compulsory Health Insurance bill that the American Association for Labor Legislation failed to have enacted by the several states. That association was a part of the Internationale at Paris twenty years ago, inspired and financed by the Imperial German Government to weaken the morale of Great Britain, France and the United States that she might more easily conquer in the world war, says Dr. John J. A. O'Reilly, of Brooklyn, in the *Illinois Medical Journal*, June, 1920.

Spinster Midwifery.—The Sheppard Maternity bill centralizes in the Children's Bureau at Washington full power to direct and control in care of maternity and infancy. The Bureau is to have committees in every locality without limit of number or membership. (Section 4, S 1039.) No doctor and no mother is named in the bill for membership, only "women." Senator Reed said in the Senate that every member of the Children's Bureau, save one, is a spinster. Hence the "women" in the ten thousand committees may all be spinsters, to investigate pregnant women and provide midwives rather than physicians.

The Children's Bureau engaged an official of the A. A. for L. L., Henry J. Harris, to write a book on Maternity Systems abroad in Germany, Austria, Russia, etc., in which appears an endorsement of the German hired

head of the Bolshevik children's bureau, the crimes of which exceed crimes of the African jungle, says the Russian Information Bulletin.

Do the American people want America covered with government-financed committees of what Senator Moses calls "Meddlesome Matties" to investigate everybody's business and card-index past histories and private affairs of every home, as these women have card-indexed legislators to intimidate them into enacting such bills as the Sheppard Maternity bill? When such "women" shall be reorganized into local and state committees, financed by one million dollars, annually, from the United States treasury, and directed by law to issue and disseminate publications of their own choosing, every covetous dream will easily be achieved by them, and the United States treasury will be within their reach.

Central Unlimited Power.—The Sheppard Maternity bill is the more dangerous because of what it does not say. It gives blanket powers to the Children's Bureau and to its chief. It gives her power to form a vast machine, spreading its net over the American people. She is to be financed by \$1,480,000, and every year by one million more. This money is not to be used in providing a bed for a mother nor a bottle of milk for a baby, but in organization, administration and propaganda.

This powerful machine can be used in securing salaries; also wages for mothers and support for children until of age. Or it can be used by "the American Association for Labor Legislation and its affiliated organizations, whose interlocking directorates" (Doctor O'Reilly says) "are linked with the Rand School."

Soviet Feature.—The Soviet feature of the Sheppard Maternity bill exceeds in importance the strong medical and social objections. It gives one woman supreme authority from the Atlantic to the Pacific and the Gulf to the Lakes. The present Chief of the proposed campaign is an endorser of feminist ideals of the unspeakable Madam Kollontai whom the Woman Patriot, quoting the Russian Information Bureau, charges with betraying Russia to Germany, and who is the one old-time Russian official to be retained by the Bolsheviks.

For several years, Miss Lathrop, Chief of the Children's Bureau, has published surveys, statistics and reports based in part upon excessive figures of the influenza epidemic tending to throw discredit upon American cities and communities. But these publications approve foreign systems where morbidity and mortality far exceed ours.

Illegitimacy Encouraged.—Her literature encourages births out of wedlock by recommendation of bonuses to illegitimate mothers.

Roosevelt patriotism is not being inspired among our mothers by the Lathrop Bureau. Its hundreds of thousands of dollars annually spent tend to frighten young girls from becoming mothers. It induces confidence of mothers away from the family physician.

International Control.—The maternity bill

will raise the women of this Bureau into a mighty political machine with "State" and "local" committees which the State agencies "shall" select and the Children's Bureau "shall recommend to the State agencies." (Page 4, Lines 18-25 of S, 1039). Then the American Association for Labor Legislation, the Rand School, their interlocking societies and the Communistic Internationale may expect official places for their followers and officers in the huge political machine under the authority of the United States government.

Please give these facts publicity for sake of public welfare.

EBEN W. BURNSTEAD, Secretary
Massachusetts Civic Alliance, Boston.

[Copied from *The Official Bulletin of the Chicago Medical Society*, Aug. 6, 1921, p. 15.]

EFFECTS OF DRY AIR AND SUN-LIGHT

Worse Than Clouds and Damp on Many Persons

Members of my harrassed family have asserted that I was born with a question mark at the end of my tongue and that "Why?" was the first word I uttered. During a residence of several years in Colorado, in a high, dry altitude, with a reputation of miraculous health-giving powers, I soon learned to use the word with greater frequency than ever.

My first disillusion regarding dry air and constant sunshine was, that it made me very ill; little by little, I made the astounding discovery that we could get "too much of a good thing," even of the highly-rated rays of the sun; and that catarrh, the enemy of damp air, was a common complaint, often acute. Old-timers, when questioned, explained that it was due to the fine dry dust and dry winds. My next disappointment was to learn that rheumatism was ever present in any and all forms, on dry and sunny days. I once heard an old colored auntie saying, as she was being helped from her rickety cart, that "the brighter the day the worse her old bones did ache."

Sore throat, tonsillitis, pneumonia (often quickly fatal), exhausted nerves and nerve irritations—all are part of this high, dry, sunny altitude said to be so beneficial in tuberculous troubles. Why so fatal to pneumonia? The answer was, "the weakened condition of the heart, due to the 'thin air' in that high, dry altitude;" weakened because of overwork, beating three times, day in and day out, where two would

do in a lower altitude. Rapid heart, high blood pressure, things never troubled about before, become a constant theme, strained nerves offer a universal excuse for everything from murder to suicide, unhappy marriage, forgetting a dinner engagement, setting the house on fire, whipping the children or kicking the cat. People are always going away for a rest to a lower altitude so as to get their "nerves calmed down," and there is a painful condition of aching feet (said to have, in early days, given rise to the term "tenderfoot" applied to all newcomers). Aching bodies, legs and arms (not rheumatism), an indescribable aching almost beyond endurance, nerve ache, I have been told, are worse in hot, sunny weather; still, so far as the intense suffering from aching feet is concerned, it is not due to the high altitude; for, I have experienced the same trouble in Los Angeles, California, in summer when the temperature reached one hundred and over and the weather was dry; but have never felt it in San Francisco, where it is damp and cool and which boasts more of fog than sunshine.

I have talked with countless numbers of tuberculous subjects. Many say, they were in the first and second stages and were cured by dry air, sunshine and freedom from dampness; others, in advanced stages, have declared themselves greatly improved. However, the high, dry altitude and flaming sun have an extraordinary effect on the spirits, a sort of mild exaltation which is most encouraging to the newcomer. Those in good health are generally so affected. This condition often leads the health-seeker to believe that the dry air and sunshine are working wonders, while they are really making no progress toward health or even improvement. The disease is actually running its course to the fatal end.

Both, sick and well, can suffer terrific eye strain, violent headaches and stomach sickness under the dazzling sunlight. People will tell you that cats do not live long in Colorado and that in early days, forty years back, it was believed that they could not exist at all in that high, dry altitude. Considering these things, we are led to wonder if the sun and dry air are really so helpful to the tuberculosis victim.

I have come to think that many troubles are contracted less through damp climates

than because of the dry, hot air in their homes. It would be interesting to know if the native Indian of the central or middle west were sufferers from tuberculous troubles in their wild state. I have been told not. A rain storm has a delightful effect on the people of Denver. There is a general letting down of nerve tension. Let a crowd get caught in a sudden shower, without umbrellas, rubbers or rain coats—regardless of best hats, dresses, coats or shoes, dripping with rain—everyone is laughing, talking; good nature prevails. For myself, I have said a thousand times, when hounded to sit in the sun, that it has always made me ill, and I believe that it has killed more than it, has ever cured. By a little investigation, you will find people all over the country who feel the same, in California, on the Atlantic coast, on Long Island, in Missouri, Michigan or any middle state. All of which shows that it is not altitude that is accountable. It is sun!

Social workers, doctors, nurses, students, and thinkers have marveled at the sight of sturdy children playing in sunless city streets. It is now a well established fact that, in proportion to number, the school lists prove that the city child is in better health than the country child. One explanation is, that better sanitary conditions in the city are responsible. After years of observation, I believe that the country child is a victim of too much sunshine.

Well, what can be done about it? We can not all live in the shade. No! But we can use means to counteract the sun's rays. We can learn what to guard against. We can stop preaching sunshine regardless of what may agree with the individual. We would not force one child to play or "sit in the sun" because another likes it, or harp at mother to sit in the sun, because father enjoys it. It agrees with some, I admit; but, eventually, we will learn that it is positively harmful to quite as many. I have seen a row of invalids and semi-invalids sitting in sun-parlors, in San Diego, California, because the sun was "good for them," until they had reached a point of collapse, asserting that the climate made them worse every minute. In truth, all the time they were suffering from excessive sunshine.

I have noticed, and felt, a singular free-

dom from the sun's effect in the Adirondack Mountains, Montreal and vicinity, north of England. As for fine looking, healthy people, where can they be found superior to those of Ireland, where it rains over two hundred days a year? And San Francisco, noted for mists and fogs—take the women born there; the same brilliant complexion of the women of Ireland. Post boxes are fastened six inches higher, some say a foot higher, than in any other city, on account of their splendid physique. I could not reach a telephone, there, without climbing on a chair. Wandering through the Michigan fields and woods, I have found the biggest and most luscious blackberries growing in shady nooks.

From my observation and experience, I believe the effect of sun and air to be so powerful on the human body, including nerves and emotions, that the time will come when men will work according to their vitality measurements. The one whose vitality is lowest, at certain periods, will not be expected to work with those who may find those same hours to be their best.

The army recognizes the effect of climate, altitude, dry and damp air, on a leaden bullet, as appears from any book on rifle range instruction and practice. So, think how much worse such conditions can affect the human frame with all its complicated machinery. Let us at least study ourselves with the same attention as that bestowed upon a lump of lead.

JOSEPHINE L. TABOUR.

Harbert, Mich.

[Miss Tabour's observations and ideas are fully in accord with the conclusions published, after the Spanish-American war, by Maj. Charles B. Woodruff, of the Medical Corps, U. S. Army. Woodruff had found, during his stay in the Philippines, that blondes do not bear intense sunlight well; indeed, that they are injured by it, while brunettes are exposed to comparatively large "doses" of sunlight without injury and, often, with positive benefit. The explanation lies in the fact that, in blondes, pigmentation takes place less readily, and it is the skin pigment that is developed to exclude the destructive short rays of light; as was shown by von Schmedel, over twenty-five years ago. Blondes are burned

by the strong sunlight while brunettes are tanned.

In a letter published in the *Medical Record* for December 11, 1909, Woodruff discusses the problem briefly and interestingly. In addition, he has contributed numerous journal articles and, we believe, one book on the question. In consequence of his publications, that were confirmed by clinical experience, the therapeutic employment of sunlight has, since, been undertaken with more suitable attention to dosage, as is manifest especially in the method followed by Rollier, in Leysin.—Ed.]

RIDING THE HOBBY HORSE

On various occasions, we have written about the hobby horse; giving it as our sincere conviction that every worker, especially every physician should have a hobby; an avocation that affords him the opportunity to find relief from his exacting duties, alleviation of his heavy responsibilities. Having but recently witnessed anew instances of men being stricken at a time when, normally and rightly, they should have had years of useful work ahead of them, succumbing almost solely because they never had learned to play, we believed it a good time to sound a warning once more.

Anything that we might say has been said, we find, in an editorial article in the April issue of the *U. S. Naval Medical Bulletin*; and the argument has been advanced in such an excellent manner that we have believed it well to pass on this splendid article to our readers. Here it is, for your entertainment:

"We would deem that man a paltry and craven fellow who needed to have some one pick out a hobby for him; whose spirit did not turn promptly and naturally for recreation in some definite direction, once the door opened and released him from the cage wherein habit and the daily duty has held him 'cabin'd, cribbed, confined.' Few of us but have or have had some natural bent, taste, interest, predilection which would incline us to a particular steed if we could get as far as the stable. The trouble is, that we do not recognize the necessity for riding a hobby; the huge benefit such exercise confers; the renewed vigor, enthusiasm, freshness with which we return

once more to our ordinary avocations on dismounting.

"As a nation, we are not sufficiently alive to the value of hobbies and are the poorer on that account. In the frenzied struggle for achievement, we repress the instinct for play. We take ourselves too seriously or we would know that the sane, sound man is but the well-matured child and must still have his toy after donning the toga; nor need he hide it thereunder. The girl who never cared for dolls may master the art of luring men, but I doubt she will ever become the full-bosomed matron deserving well of the republic. The boy who never played soldier or Indian, who longed not consumingly for red-top boots, for whom the swimming hole and the snow fight had no insidious fascination, will likely develop into a weird and peculiar creature incapable of greatness except in some narrow by-path of life.

"The hobby is not the fad, nor the strictly utilitarian employment of leisure hours. We do not go to the circus or the barnyard when we want a horse for a canter. Golf, tennis, philanthropy are not in the domain of hobbies. The true hobby is a pursuit in the literal sense of the word. It takes the rider's mind away at a gallop from the ordinary path of plodding through pain or pleasure to where he forgets wife and child, business and profit, responsibility, duty, immortality, eternity—even himself. Like Curl, he may go in for art, or like Richards for ornithology.¹ He may tinker with gears and carbureters like Murphy, a great inventor manqué, who is never so happy as when he has taken his eight-cylinder car apart and put it together again, or be a philatelist like Lowndes and Blackwood and McCullough, who have valuable collections.

"Your true hobby is the opposite of that repression about which the psychiatrists have so much to tell us in these latter days. We would have fewer cults of the inane, fewer worshippers of foolish fetiches, fewer scatter-brained reformers, fewer people passionately addicted to meddling in the affairs of other people, if there were more riders of hobbies, hobbies sound of wind and stout of limb. With more collectors of curios in Wall Street, the stock

exchange would not yield so many suicides, so many cases of cerebral hemorrhage. Hobbies should be as compulsory for all mankind as physical exercises are for naval officers.

"Microscopy owes much to the clergymen of England who devoted themselves to diatoms as a rest from the dogma of damnation. Holland was never so great at home and abroad as when it took tulips seriously. By no schooling or art could "the last of the Capets" have been taught to govern France well. He inherited the revolution and the guillotine, but the passion for making locks at least brought him happiness till the knife fell. Victor Emanuel, as a numismatist, can forget the menace of the red flag, the perennial rumbling of earthquakes. The Prince of Monaco need not vex his soul over the pettiness of his dominions above sea level, for, is not all the expanse of the vasty deep his to explore for what "the dark unfathomed caves of ocean bear?"

"Are you surfeited with wealth and must you hire clerks by the score to calculate your income tax? Become a collector of Persian rugs, of poison rings, of snuff boxes, or teapots. For such pastimes you need not be a fire worshiper, a machinator of Machiavellian plots, a user of sternutatories, nor a patron of Sir Thomas Lipton. Are you poor and needy? You will only be at expense for shoe leather as you tramp after butterflies, bugs and beetles or burrow for arrow heads. Build shelves and cabinets for your *trouvailles*. Sort, classify, and label them. Breed bees in your own back yard. Gold fishes have an extensive literature all their own and, the smaller the bit of wafer you feed them from Sunday to Sunday, the better they will thrive.

"No class of men need a hobby as badly as do the doctors. From your patients with their pettishness, their selfishness, their exactions, their tyrannies, their whims, megrims, prejudices, and prevarications; from the persecutions of their pestiferous friends and relations; from the envy and malice of colleagues; from the book agent; from the exploiter of stocks and gold mines; from the compounder of pills and potions; from the promoter of patent appliances; above all from yourself—your conceit, your dogmatism, your exhausting efforts at affability, your simulated sym-

¹Capt. T. W. Richards, United States Navy, has contributed many specimens of birds and some 12,000 birds' eggs to the collection of the Smithsonian Institution, Washington, D. C.

pathy, your pretended devotion, your unflagging good nature, your concern for fees, your relish for approbation and applause, you must have respite. You must have rest from the gaunt and haggard countenance of the sick and the haunting appeal of the hollow eyes, his mute reproach, his agony of doubt; from his pain and your powerlessness. You must get out of earshot of moans and groans and leave the scenes of horror and death. If you are to bear your burdens worthily, make it a practice to lay aside the yoke each day and go a-maying in "fresh woods and pastures new." Without such relief, your devotion will pay the penalty of frayed and broken heartstrings or of a soul obtunded and callous.

"A hobby you will have in spite of everything. Woe betide the man whose hobby is part and parcel of his profession. Such a one is damned and thrice damned. His road leads deeper and deeper into the darkness of misguided arrogance. Let it once be suspected that you ride a medical hobby and, then, whatever the merits of your steed as to gait or color, his rider is reckoned a crank. Should it be discovered that you do not believe in drugs or that you hold a particular remedy to have sovereign power for all diseases; should it be bruited about that you regard some special symptoms as of unfailing prognostic import, you will find your favor with the public assuming an inverse ratio to the strength of your convictions. It is valuable to be esteemed up to date, but damaging to be considered an experimenter. For one who rejoices in your advanced views on the endocrines, there will be a hundred to dub you a dangerous visionary. The man who laughs at the transplantation of simian glands, when well, will make a wry face and declare he wants no veterinary in attendance, once he gets sick. To study anthropology and comparative anatomy is to have people say that you are a gross materialist and view your patients as mere animals. The geologist's hammer will not overweight your saddle bags but beware how you dispose specimens of palaeontology about the office. Even to be a collector of cartoons is not without peril. He to whom men and women confess the sins of the body dread the lover of incongruities, the gatherer of grotesques, the ferreter out of human foibles.

"Photography is a useful hobby. Once in

a while you may even harness this animal in the shafts of your buggy; but, in the main, you will be wise to go far afield. Prefer roses, chrysanthemums, manuscripts, mezzotints, autographs, Japanese prints, incunabula, postage stamps, posters.

"There is a single exception. To go in for the study of medical history is, to polish and round off your knowledge. By no other line of research can you so easily acquire a sense of proportion. To the young, it serves as a counterpoise to natural enthusiasm and overconfidence. A knowledge of the errors of the past will make you humble, liberal, tolerant, circumspect; cautious in embracing radical innovations; slow to discard the good. If middle life or declining years find you still unprovided with a hobby, choose this one above all others. Age turns naturally to the past. It is pleasanter to follow the great deeds of others than to contemplate one's own failures. As hopes decay and the future holds more and more of uncertainty and gloom, you will find consolation in reviewing the rise and fall of systems, in seeking the key to this man's error, in learning how that one just missed the immortality of success.

"See the pretty hobbies, gentlemen, at your service; good hobbies, all of them. Choose according to your fancy but have a thought to your figures and match your length of limb to the horse's girth. The roan, the brown, the black, the bay, the chestnut, the piebald, the skewbald, the sorrel, the flea-bitten white and gray! There they stand with rolling eyes, tails switching, ears moving incessantly. There's mares and geldings; there's the flowing mane and the hogged one, the long tail and the bobbed one. There is one that can canter and caracole, can amble and do the piafello and Spanish trot. Yon little short-coupled fellow is a stayer. The long rangy one will give you an easy ride. Here's a beast stands 16 hands in his four white stockings; look at the hocks on him, and the rump. He'll take you over the timber and not flinch at the water jump if you've got the heart for it. Have you a mind to make a show in the park? Here's one with a bit of knee action will fret himself into a lather and make a mightier commotion going once around the bridge path than the weedy thoroughbred at his side in clipping the daisies over a mile of turf. Take your

pick, gentlemen, and ride whither and how you will. Only get quickly into the saddle. There's no Hobson's choice in the lot of them.

Hobbies of Great Physicians

Auenbrugger	Music
Bell, Charles	Art
Bell, John	Art
Boerhaave	Music
Bright	Art: collecting engravings
Astley Cooper	Courtesy
Hodgkin	Philanthropy
Holmes	Literature
Jenner	Birds and music
Laennec	Horseback riding; music
Murchison	Geology
Osler	History of Medicine
Parkinson	Politics
Young	Horseback riding; dancing; Egyptology

SANE REASONING AND OTHERWISE

Near the climax of one of the most enthusiastic annual sessions of the "Tri-State Medical Society" of Alabama, Georgia and Tennessee, that was being held in Chattanooga, at a time also when there was a serious epidemic of typhoid fever among the great number of soldiers in camp at Fort Oglethorpe, the discussion of a paper on "Intestinal Hemorrhage" had reached its liveliest pitch when the late Dr. H. Berlin entered the hall and was called on for an expression of his opinion upon this very important subject, almost before he had been seated. Besides occupying a most enviable position among our medical leaders, Doctor Berlin was somewhat famous among his wide circle of acquaintances; hence, his opinion was always sought and, as a rule, accepted as authoritative by a large number of his colleagues, although his language might be said to be a conglomerate medley of odds and ends from two vocabularies, English and German, with the latter in marked preponderance. Think of a dialect so unique and spoken by a vivacious, exuberant (always jolly, hence, always fat) individual.

He responded promptly, leading off in his remarks in his characteristic lingo and in measured, semihumorous style. While his mood was not at all desultory, he was a bit more reserved than was his wont, it seemed to me. Still, he proceeded, keeping well within the right-of-way of his theme, growing more and more enthused by the intruding ideas induced by his concen-

tration of mind upon the subject, thus expanding as he progressed in this discussion until reaching the point of original, individual conception ("inspiration" as many would term it). Suddenly, he halted in his "ruff-and-tumble," now rapidly uttered jargon, his countenance beaming, as he went off at a tangent entirely irrelevant to the line of argument, and he gave us this unique simile, I'll try to quote him. "Id has to me always von strange ding peen, dot man wouldt pe creadet mit two of der dings for vitch he vouldt der least use haff and put von off dose mit vitch he wouldt der most use haff. Ve see a man mit dwo eyes, dwo ears, dwo nostrils, dwo arms, dwo lungs, dwo kidneys, dwo destikless, dwo leggs, und so fordrt; ven he vouldt haff put von mout, von gullet, von sdomak, von heardt, von liffer, von gutt, von benis undt von anus. A leedle piece off eider off dese organs can he not do mitoudt, put he can do alright mitoudt eider von, undt sometimes bodt off der oders!" Here, his countenance changed to a serious, reflective look, his voice dropped to a lower pitch, and he continued in measured speech. "Put, mein friendts, I do nod cridicise der Creador, mindt you. Maybe you dinks I haff, put no. Anyvay, I begs your bardons, und I say maype dots vat's wrong down do der post, ve all are dinkin more aboutt der Creador's bizzness as ve mide apoudt der indestinal hemorrhages. So I again peg your bardons, laddies and chendlemens."

Slowly, thoughtfully, and as though in a semihumiliated manner, he took his seat, his eyes searching the floor, and he looked the mood of abjection. His speech was a brief one, but intensive, and laid bare the man himself. He demonstrated at the outset, how he went about comprehending, how he had obtained his vast fund of knowledge, by comparative reasoning, of the immediate problem compared with the precedents of the past an so on. Next, he gave us an insight into the rapidity of his thought, his wonderfully elastic perceptibilities, diffusible inception of ideas; his masterly deductions, and, finally, his wonderful conclusions. Indeed, he removed every obscurity and exposed to us his whole mental machinery, revealing completely to the careful observer his wonderful capabilities of thought and power of reasoning.

This man was one of that class of individuals who possess frankness of manner

and style in all of his intercourse with fellowmen and with the world generally. Nothing "sub rosa" about him. Plain, pointed, positive, conscientious and frankly earnest: readily understood, promptly decisive and steadfast in principle, a stranger to affectation; and a friend (if your friend he be) upon whom you can depend for everything that word stands for. Sad pity it is that the world has not more of that class. Yet, it would appear to me, personally, that there is a perceptible tendency amongst the better learned element toward independence of thought, unrestricted reasoning, and frankness of opinion; in short, the unfettering of truth, the unshackling of conscience, in fact the approach to a social, and intellectual situation of mankind that is destined ultimately to reach a higher plane in the world of understanding, and attain to verification of theory now vague, and unknown.

We have history to support the prediction of inevitable retrograde development through such sociopolitical upheavals which are really inverted acknowledgment of the failure of church influences—not Christian influences, because Christianity has nothing whatever to do with such movements, however much it may be slandered by the accusation.

The methods resorted to and accomplished by the promoters of "prohibitive and suffrage reform" are as diametrically opposed to those practiced by the lowly Nazarene as are the directions of north and south. He invoked the aid of no legislative body to force men to do good. In fact, He kept as far from "lawful forces" as possible, and enjoined upon his flock to "force nothing upon their fellow man" but lead them into the path of right by precept and gentle influences. Moreover, so serious a piece of legislation as that of changing a national constitution, and that done in the absence of far the larger and better half of its voting citizenship, who were engaged in a world's war for the liberty of the whole earth, can be nothing but a disgrace upon the fair name, and definition of Liberty, and the grossest ingratitude shown those absentees. According to experience as recorded in history, such laws are of more or less brief duration.

But, I'm guilty of the crime of digression from my subject, although it's but a little

way back, and I shall choose as a bypath an expression of hope that the day of the 'reformer' may be drawing to a close, like the Indian's tree, that "was so straight it leaned over terribly." Thus, the reformer in ending his rule by overdoses of his "reform." The pendulum of our nation's progress will swing back to normal and, from under the shadow of plutocracy and bureaucracy, which hangs like a pall in the not-very-distant horizon of our present, lamentable and perilous political situations may be avoided. Back we must turn, to the steadfast principles embodied in the constitution prior to its "reform," guaranteeing a freedom and a liberty under which we have prospered and progressed. Under this unadulterated constitution we may again prosper and progress.

LOUIS W. SPRADLING.

Athens, Tenn.

ANATOMY AS CONCEIVED BY ROYALTY

In an idle moment my thoughts turned to a trip in Europe, taken years ago, and which included Germany in the itinerary. Thinking that it might be of interest from the anatomist's viewpoint, I give it for what it is worth.

Among the many curious things that one views in his travels in Europe, probably none are more noticeable than those which meet the eye in the "old castle" and palace at Potsdam in Prussia.

The visitor first notices the fact that there are no stairways in the castle nor is he kept long in doubt as to the meaning of this. He is informed that one of the ancestors of the ex-emperor suffered from rheumatism and that he was unable to walk up and down stairs. As a consequence, he had the stairways removed and in their place he substituted inclines for his convenience; and these still remain in evidence.

This King of Prussia, in addition to his rheumatism, was somewhat lacking in brain power and imagined himself an artist. As a matter of fact, he showed some ability as a painter but his efforts in this line, as demonstrated by a portrait of a lady of the court, proved clearly his mental aberration. While the picture is eminently artistic, on examining it, one observes that both feet, which are shown bare, are right feet and perfectly delineated, thus producing a curi-

ous anatomical monotony, almost as wonderful as is seen in the works of the old masters who painted human forms with wings and called them angels.

WM. T. THACKERAY.

Fowlerton, Tex.

PELLAGRA

At this period of the recrudescence of pellagra, especially in the South, it is well to remember that:

1. Pellagra is caused by drinking soft, or "freestone," water coming from clay soils.

2. Pellagra is prevented by drinking hard, or "limestone," water whose hardness is due to the presence of carbonates of lime and magnesium.

3. Pellagra is cured by the hypodermic administration of a 10-percent solution of neutral sodium citrate. Inject one mil (cubic centimeter) daily for thirty days. Then on alternate days for thirty days longer.

E. M. PERDUE.

Kansas City, Mo.

THE THERAPY OF OLIVE OIL

While looking through an old volume (1912) of *The Medical Review of Reviews*, we came across an article entitled "Olive Oil in General Practice", and contributed by Dr. Israel Bram, of Philadelphia. This article is so useful that we are tempted to reprint it. However, an abstract may serve to call attention to the many uses to which olive oil may be put.

Doctor Bram finds that the fixed oil expressed from the ripe fruit of *Olea Europaea* is gradually but surely supplanting the old-fashioned pure codliver oil. The pure olive oil expressed from the fruit without heat is almost colorless, odorless and tasteless, and, if carefully administered, rarely causes digestive disturbances. In these respects, at least, it is superior to the pure codliver oil, with the exception of its various combinations with hypophosphites, glycerin, aromatics, and so forth. Among the indications for the use of olive oil, Doctor Bram has found that, in tuberculosis, it is capable of causing a rapid increase in weight. The oil is of great value as a nutrient in such wasting diseases as marasmus, scrofula, and chronic skin dis-

eases; also, in convalescence from measles, scarlet fever and whooping cough. In young children and infants, good results may be obtained by its administration by inunction, once or twice daily. Babies suffering with malnutrition and stubborn constipation may be relieved of both by the administration of one dram of olive oil, once or twice a day. Olive oil is a valuable emollient in the treatment of irritant poisoning (excepting that caused by carbolic acid or phosphorus) and may be given in large doses to soothe the gastrointestinal tract.

It is an excellent demulcent laxative in cases of hemorrhoids and fissure of the anus. Obstructive jaundice is oftentimes relieved by the administration of oz. ½ to oz. 3 of the olive oil, and it is said to cause the expulsion of gallstones indirectly by stimulating the flow of bile.

Lead colic also has been relieved and the persistent constipation overcome by the administration of olive oil in tumblerful doses, once daily. Obstinate and painful dry pleurisy may be relieved by the injection of ½ dram of sterile olive oil in the pleural sac. Rectal enemas of olive oil are useful in the treatment of mucomembranous colitis, in the constipation of neurasthenia and in intestinal atony; from 3 to 10 ounces being injected slowly at bedtime and retained over night, if possible. In typhoid fever, Bram finds that olive oil has an almost unlimited field of usefulness. It serves as a food, overcoming the strong tendency to emaciation. It is a superior laxative, permitting the intestinal contents to escape without irritating the inflamed Peyer's patches. It diminishes the tendency to intestinal hemorrhage and tends to prevent tympanites by rendering the bowels free from gas-forming substances.

Doctor Bram finds that olive oil is best administered cold in gradually increased doses, about two hours after meals. It may be taken alone or flavored with glycerin, orange juice, coffee, or syrup of sarsaparilla.

On looking through the literature, we find that olive oil has not been given the attention that it evidently deserves. Still, many authors have found it useful in various conditions. Writing in the *New York Medical Journal*, for instance, (1912), R. H. Ferguson recommends the rectal injection of olive oil in patients under surgical anes-

thetia, in cases of infection, for the purpose of restoring the phagocytic power which is weakened by the anesthetic. Six ounces of the pure oil are introduced slowly, high up in the rectum, as soon as possible after the removal of the anesthetic.

In the *New York Medical Journal* for February 3, 1917, Dr. Eugene J. Asnis reports on some experiments made with olive oil in dogs in which gastric fistula had been established. These, while of great interest, must be studied in the original. Clinically, the author found olive oil to give the best results in constipation, and simple hyperacidities, particularly in instances showing lack of nutrition. In hyperacidity and pylorospasm due to fissure or simple ulcer, there was a notable abatement of symptoms and a general improvement, this being most marked when there was evident a tendency to constipation and also poor nutrition. In cases of cholecystitis and cholelithiasis, however, no improvement was observed. The good effect of olive oil in hyperacidity and pylorospasm probably is to be attributed to its inhibiting the gastric secretion and protecting the irritated mucous membrane. Asnis points out, however, that olive oil is contraindicated in certain gastric affections, such as dilatation, subacidity, and achylia.

In cases of gallstones and colic, Asnis, writing in the *Proctologist and Gastroenterologist* (quoted in *Ind. Med. Jour.*, Feb., 1918) says that the use of large doses of olive oil in preference to morphine is justified. Rutherford, of the U. S. Army Medical Department, speaking of the treatment of diarrhea and dysentery contracted by soldiers in the Philippines, has found that olive oil increases the flow of watery bile. The liquid bile acts as an intestinal antiseptic, promotes absorption of fat, acts as a local sedative, reduces putrefaction and fermentation, and its use is followed by a general gain in weight and strength.

In "Dynamical Therapeutics", second edition, (1898) p. 367, Webster advocates the use of olive oil "for its specific effect in the prevention of the formation of gallstones." Despite this action being denied, by many authors, Webster claims that clinical evidence is strongly in support of this contention. He has known olive oil to thoroughly break up the "gallstone habit" after it had been confirmed for several years and after other remedies had failed, in several instances.

As to the value of olive oil in relieving

paroxysms of biliary colic, opinions differ widely. Mayo Robson has not seen much good follow its administration, and it also has proved useless in Osler's experience. Still, there are many clinicians who prize this method highly.

Olive oil has found many uses aside from its employment as an article of food. In smallpox, a mixture of olive oil and lime water brushed freely over the skin relieves the burning and itching and contributes to the comfort of the patient. Similarly, it may be employed in other exanthemas, such as measles and scarlet fever. In the hemorrhage of typhoid fever, the intestines should be kept absolutely at rest and then peristalsis should be permitted only after enemas of olive oil (Yeo, "Manual of Medical Treatment," Vol. 2).

We believe that sufficient has been said to arouse renewed interest in olive oil which is one of the most ancient and most highly considered therapeutic agents. Of recent years, it has fallen somewhat into disuse, if not into unmerited disrepute, partly through the dishonesty of quacks who pretended to have removed large numbers of gallstones, being able to "demonstrate" these to the trusting patients because olive oil administered in cases of cholelithiasis sometimes is changed into pseudo-calculi consisting of oleic, palmitic and margaric acids combined with lime. *Abusus non tollit usum* is an ancient truism (abuse does not interfere with legitimate use) and, despite the misuse of olive oil, at the hands of irresponsible practitioners, it were well if honest physicians were to reconsider the many meritorious uses to which this simple and well-established remedy may be put. It is to be considered only that olive oil should never be sophisticated or replaced by the "sweet oil" of the market which usually consists of cotton-seed oil or other extractives. While corn oil, for instance, is equal to olive oil in many respects, cotton-seed oil can not be said to even approach it in merit. At any rate, it will be well, when it is desired to use olive oil, to obtain the pure article.

A CHINESE MEDICAL SCHOOL.

Plans were announced for the dedication of the new buildings of the *Peking Union Medical College*, erected by the China Medical Board of the Rockefeller Foundation.

The ceremonies will fill the week from September 15 to 22 and will include an international medical conference to which scientists from America and European countries as well as from the Far East have been invited. At that time will also occur the inauguration of the Director of the College, Dr. Henry S. Houghton, and regular sessions of the institution's Board of Trustees, which is composed of representatives of the Rockefeller Foundation and of six missionary societies which had maintained an earlier medical college in the city of Peking.

The Peking Union Medical College, situated in the capital of the Chinese republic, had its beginning in an earlier institution, the Union Medical College, founded in 1906 by the joint efforts of six British and American missionary societies. The property of the earlier school was transferred, in 1916, to the China Medical Board of the Rockefeller Foundation, which has purchased additional land and erected, in an interesting adaptation of classic Chinese architecture, a series of hospital and laboratory buildings. The institution comprises not only the medical school, but also a two hundred and fifty-bed hospital with outpatient clinics, a nurses' training school, and a premedical school—an institution of junior college grade with a distinct faculty and group of laboratory and classroom buildings.

VINDICATION OF GROUP MEDICINE

The futility of limiting the treatment of our patients to those objective and subjective symptoms that are immediately manifest is being stressed more and more; and with much justice. Such a procedure actually amounts to treating the disease instead of the patient. That is to say, in accordance with the wish commonly expressed by the patient, a diagnosis is made based upon the most evident signs and symptoms and then the patient is subjected to such treatment as has been found successful in similar cases; all this being done more or less in a routine manner. The consequence is that, very often, some slight improvement is experienced promptly but, then, the patient comes to a standstill, there is no further amelioration and complete recovery is vainly expected. Sooner or later the patient changes doctors and, ultimately,

falls into the hands of drugless healers, mental healers and so forth.

This sort of thing is due, in part, to the fact that we are prone to forget that the same patient may suffer from various entirely different affections at the same time; also that the clinical symptoms that are complained of may be due to an injury in a locality quite unsuspected and distant from the alleged or assumed seat of disease. Often the difficulty is obviated by acting upon the theory that a certain degree of autointoxication (both bacterial and intestinal in origin) exists in almost all persons whose health is not perfect. However, even that is not sufficient in a great many cases.

Another means for ascertaining any and every damage existing in a certain organism is that afforded by what we know as group medicine. This, indeed, is something that makes it possible in a great many instances to discover definitely the location or locations of existing harm and to take proper steps for their removal.

The diagnosis of a given case of illness is by no means complete after a certain more or less indefinite name has been tacked on to a syndrome of symptoms related or complained of by the patient. As we conceive it, a diagnosis virtually amounts to a complete and exact inventory of the patient's liabilities and, no less, of his assets, physical, mental and psychic. The last two are by no means less important than is the first, since we have fortunately come to a full recognition of the important influence exerted by the emotions upon our physical well-being.

Even considering solely the physical functions of the organism, a diagnosis is by no means a simple matter and the careful physician will invariably refuse to commit himself until he has had an opportunity of making a detailed examination of all organs of the patient. This, though, frequently calls for the associated efforts of specialists whose high degree of training and experience in their particular fields naturally are superior to the knowledge of the general practitioner. It is, however, the latter who will have to collate, assemble and consider in their various relations the results of all special investigations.

It may be necessary, therefore, to call in the aid of the dentist and of the eye, ear, nose and throat specialist, of the x-ray

technician, the laboratory technician; sometimes of the surgeon; in short, according to the nature of the case under consideration, specialists of all kinds may have to be appealed to for their assistance.

We are far from asserting that such special investigation must be undertaken in every single case of illness. Many times, the general practitioner's knowledge of malfunction in the various organs of the body may suffice to recognize and remedy existing irregularities. However, when, after a reasonable time of well-planned and properly administered treatment, recovery does not ensue, it will usually be necessary to resort to the greater knowledge (in certain fields) possessed by specialists.

All this is well illustrated in a communication by Dr. Arthur L. Smith, of Lincoln, Nebr., read before the Medical Society of the Missouri Valley, in September last (*Med. Herald*, April). From the several case histories related by Doctor Smith, we will cite just one or two.

A rhinologist examined a lady who was having severe headaches and he decided that a deviated septum was the etiological factor. The septum was removed; a perforation followed. A perforation of the hard palate brought her to me. Now, a complete examination by any competent internist would have shown this lady to have had syphilis and, under proper treatment, this irreparable damage could have been prevented.

A girl twelve years old had had an intermittent temperature for about two weeks. Her tonsils had been removed two years before; so, the teeth were blamed for the temperature especially since a suppurating gland was present under the chin. Two teeth were removed (no cultures taken) but the fever continued. The dentist told me that the teeth were normal. No general examination, except of the lungs, had been made. After complete examination with the aid of a dentist and rhinologist, a streptococcus pyelonephritis and cystitis were found. Local treatment of these conditions removed the trouble; the girl recovered and has been well for the past eleven months with the exception of a nephritis which probably developed during the time wasted by the specialists.

Doctor Smith justly asserts that the internist who does not make a complete examination and does not take advantage of specialists' training [wherever it is necessary.—Ed.] is to be condemned. It is his firm belief that no one man can become competent in the examination and treatment

of the entire body, either medically or surgically. Consequently, the aid of specialists must be invoked at proper times.

PASSING OF THE RUBBER GLOVE

The rubber glove seems to be passing out and more than one surgeon is quite willing that it should. Its day is over and past, says Morris along with others; and, still, to be fair, there are surgeons who disagree.

The first contend that it dulls the tactile sense, the sense of touch. For operative work, the finger-ends should be as sensitive as can be. To cover them with cots or gloves, no matter how thin the tissue interposed, must necessarily make them less tactilely acute, less quick to feel and therefore less helpful as the preceptive agents they might otherwise be.

Surgeons working without gloves have said that they can do better work; that they can operate through smaller incisions than commonly; and that adhesions develop less often in their cases, this because manual traumatism is not so often inflicted upon the patient. The thing rings true.

Morris thinks that gloves are not needed as a safeguard against infection by one who prepared his hands as he should, previous to operating. Now that we have so powerful an agent as Dakin's water-soluble chloramine supplied as a soap powder, it is quite possible, by thorough washing and rinsing, and scrubbing for the nails, to cleanse the hands very effectually. To get the best results, one should rub into the skin the germicidal lather which is formed thereby and leave it on the hands at the last, just before operating.

The soap in question contains no alkali to roughen the skin; on the contrary, its use day after day softens it and in so doing renders the tactile sense more acute.

Further, one may use surgeon's varnish of the following formula: pyroxylin (soluble cotton) 1.75 Gm; amyl acetate, 35 mls; Canadian turpentine, 11.2 Gm; castor oil, 2.85 Gm; acetone, sufficient to make 100 mls. To this varnish, which serves to coat the part where applied, chlorazene to the extent of 1 percent may be added to good advantage.

To remove this varnish from the hands is not difficult; it may be done by means of a wash consisting of acetone and denatured alcohol, equal parts.

Among the Books

JONES: "ORTHOPEDIC SURGERY"

Orthopedic Surgery and Injuries. By various authors. Edited by Sir Robert Jones, K. B. E., C. B., F. R. C. S. Published in two volumes. London: Oxford University Press, 1921.

That the World War, recently concluded, should have been fought without an influence on modern medicine and surgery, is inconceivable. When we entered the war, we had some knowledge of what has been done for the sick and wounded not only in preceding wars, beginning with the Civil War, but during the years preceding our entry into the great conflict then in progress.

Now that the war is over, we have with us the unusually large number of crippled and maimed who have a right to the best possible professional care. They are innocent victims of the methods by which civilized nations still settle their difficulties and, while the economic problem involved falls on the shoulders of the government, the material means, by which the concerned individuals are to be rendered capable of earning their existence, though hampered by physical defects of all sorts, must in the long run fall on the shoulders of the medical profession irrespective whether its members are employed by the government or are free practitioners.

We hail, therefore, with delight a two-volume work, which has come to our desk for review, entitled: "Orthopedic Surgery of Injuries." The book is edited by Dr. Robert Jones assisted by a host of English surgeons who have had vast experience during and after the war.

The book is British. Only two American surgeons, Joel E. Goldthwait and F. C. Kidner, have contributed a small chapter each.

The book is not a textbook in the ordinary sense. When a number of men collaborate or, rather, contribute their experiences on special subjects, a work assumes encyclopedic importance and this must be conceded

to the volumes under consideration.

Not a deformity, ~~not an~~ injury, not an organ affected by surgical disease which can be forced into the classification of orthopedics has been overlooked. If anything, the Reviewer is inclined to the belief that the dividing line between general surgery and orthopedic surgery has not been drawn sharply so that the surgeon (even the occasional operator) will find almost as much food for thought in the volumes as the orthopedic specialist.

To illustrate, we need but glance at the chapter on the treatment of chronic osteomyelitis. Here we have to deal with a purely surgical problem in that the exploration and radical removal of sinuses calls for operative surgery in the common acceptance of the term. Similarly, amputations and reamputations are pure surgical problems except in so far as the adaptability of the stump for an artificial limb is concerned.

The ankyloses, the great problem of loosening stiffened joints, both by mechanic or orthopedic and surgical measures, represent a variety which can not be discussed fully in no matter how large a work; yet, in the present volumes, the subject has been handled not only in masterly fashion but almost exhaustively.

The chapters on reconstruction and reconstruction institutions, one of which is from the pen of former King Manuel of Portugal, contain much that is interesting to those who desire an insight into the training of such cripples, whose deformities have reached a stage requiring vocational (occupational) practice rather than remedial measures.

"THE PRACTICAL MEDICINE SERIES"

The Practical Medicine Series, Comprising Eight Volumes on the Year's Progress in Medicine and Surgery. Under the General Editorial Charge of Charles L. Mix,

A. M., M. D. Vol. 1, General Medicine, Edited by Frank Billings, M. S., M. D. and Burrell O. Raulston, A. B., M. D. Series 1921 Chicago: The Year Book Publishers.

This first volume of the 1921 issues of "The Practical Medicine Series" once more exemplifies the decided and practical merits of the publication which supplies the general practitioner with a digest of the medical literature, appearing during the last year, that gives sufficient information to be workable and is, we believe, even better for his purposes than is the "Zentralblatt" idea. On glancing through this present volume, we find copious abstracts, for instance, of a report on prophylactic vaccination of 1536 persons against acute respiratory diseases. The bacterial vaccines employed corresponded to the so-called Rosenow vaccine. Both contained the typed pneumococci. While the results were not brilliantly in favor of protective vaccination against influenza, they do show an encouraging protection against the occurrence of pneumonia. This work requires much further investigation.

Another abstract calls attention to the importance of studying the entire heart in so-called heart cases rather than limiting one's attention to the occurrence or nonoccurrence of murmurs. The subject of endocrinology has come in for a good deal of discussion and so has the very important problem of renal disease.

These are just isolated instances of the copious and numerous abstracts contained in the little volume of 617 reading pages, which would be worth several times its price.

While the series is published primarily for the general practitioner, the arrangement in eight volumes annually enables those interested in special subjects to buy only those parts that they desire. The divisions are broadly, general medicine; general surgery; eye, ear, nose and throat; pediatrics and orthopedic surgery; gynecology and obstetrics; therapeutics and preventive medicine; skin and venereal diseases; nervous and mental diseases.

OERTEL: "GENERAL PATHOLOGY"

General Pathology. An Introduction to the Study of Medicine. Being a discussion of the development and nature of processes

of disease. By Horst Oertel, Strathcona Professor of Pathology, etc., McGill University. New York. P. B. Hoeber. 1921.

The purpose of the author, he informs us, in writing this book was, to convey to his readers that pathology must be approached within the frame of modern biology, and that, in the study of disease no less than in the study of health, scientific vision is possible only if we divest ourselves of all metaphysical and teleological conceptions of use, harm, defense, vital forces, conscious purpose, etc., and treat pathological processes entirely as expressions of physicochemical laws.

His second aim was, to furnish to the reader an appreciation of present ideas by tracing their historic development. The history of a science is an essential part of it, and should be presented, not as a simple recital of sequences, but in the bearing and influence which one step of thought exerts upon the next. This possesses not only great educational value but is the only way of arriving at proper evaluation and understanding of current ideas; furthermore, it cultivates a critical judgment for the future.

The third purpose was, to visualize as much as possible pathological occurrences; and, therefore, great emphasis has been put on the anatomic-histological, formal side from the dynamic standpoint.

Lastly, the author has thought it essential to include a somewhat more extensive discussion of certain subjects (heredity, disposition, and others) than is usually devoted to them in textbooks of pathology.

Book One, dealing with etiology, is devoted to the consideration of bacteria and infection as agents producing pathological processes; also, physical and chemical factors as the cause of disease are discussed, and finally the problems of disposition and idiosyncrasy, and of heredity. Book Two comprises the chapters on pathological anatomy, histology and pathogenesis.

This book is essentially the general practitioner's pathology. It treats this somewhat difficult subject in an attractive manner and clothes it with a degree of interest that comparatively few, of the older men, at least, have been able to conceive for it. It should, by all means, be studied carefully; for the immediate benefit to be gained thereby, primarily; but, no less, because of the fact that such study can not

but widen the vision of the practitioner and give him a far better viewpoint for his dealings with disease and diseased persons.

"HARROWER'S MONOGRAPHS"

Harrower's Monographs on the Internal Secretions. Vol. 1., No. 2. Neurasthenia, An Endocrine Syndrome. Edited by Henry R. Harrower, M. D. Published Quarterly by The Harrower Laboratory, Glendale, Calif. 1921.

The second volume of Harrower's Monographs is devoted to the study of neurasthenia in so far as it constitutes a syndrome of endocrine dysfunction. It is held by many physicians that, fundamentally, the various phenomena designated as neurasthenia present an endocrine symptom complex. The author attempts in this booklet to show that from the underlying, predisposing, physiologic strata to the direct, exciting causes, there is a large endocrine aspect to its etiology, and that, therefore, the consideration of this disorder from this particular viewpoint is likely to broaden materially our possibilities for therapeutic success.

There can be nothing strange or objectionable in such a viewpoint. Most of us have become convinced, either theoretically or through more or less isolated clinical observations, of the decided power for good inherent in endocrine remedies in certain conditions of ill health that can properly be included among the so-called neurasthenic ailments.

Harrower utilizes, in enforcing his arguments, his enormous familiarity with the current literature on the subject and, to say the least, he makes out a mighty good case in favor of his thesis. General practitioners will find this and the other issues of Harrower's Monographs worth while and of service.

RETTGER AND CHEPLIN: "THE INTESTINAL FLORA"

A Treatise on the Transformation of The Intestinal Flora With Special Reference to the Implantation of *Bacillus Acidophilus*. By Leo F. Rettger and Harry A. Cheplin. New Haven: Yale University Press. 1921.

This volume of one hundred and thirty-

five pages, with charts and illustrations, consists of a historical review and the detailed results of experiments on white rats and human subjects in the attempt to produce a transformation of the intestinal flora. The historical review is very complete and contains, in addition to the references on the *bacillus bulgaricus*, the *bacillus bifidus* and the *bacillus acidophilus*, a rather comprehensive account of the attempts of various research workers to reduce the number of intestinal microorganisms, especially putrefactive ones, by the administration of antiseptics. As is to be expected, the results leave one very much in doubt as to the value of these methods, owing to the conflicting statements by various observers.

However, we find no reference whatever to the sulphocarbolates in the long list of antiseptics mentioned. The authors probably would not admit clinical evidence, even though it has been reported by a number of competent observers, that favorable clinical results are obtainable in the majority of cases with these drugs.

The authors conclude, as a result of their experimental work, that the heterogeneous intestinal flora bears a definite relation to the diet and that this flora may be influenced by alterations in the diet or by the ingestion of living cultures of *bacillus acidophilus* with or without accompanying carbohydrates, particularly lactose and dextrose. Maltose, sucrose and glucose apparently exercise no transforming influence on the bacterial types in the intestinal tract. As a result of high calory diets of either lactose or dextrose, they were enabled to produce a change from the putrefactive to the fermentative state of metabolism in the intestinal contents, but found that as soon as the proper carbohydrate protein ratio was disturbed, putrefactive metabolism again returned.

They state that the *bacillus bulgaricus* is incapable of accommodating itself to intestinal conditions. They claim, however, that the administration of both, *bacillus bifidus* and *bacillus acidophilus*, with a view to implantation, has a thoroughly sound and logical basis and the administration of such cultures has been found to be particularly effective in transforming the intestinal flora of man.

Whether or not they have made out a case against the present clinical use, with

apparent satisfaction, of *bacillus bulgaricus*, remains to be seen.

DREYER: "ASSESSMENTS OF PHYSICAL FITNESS"

The Assessment of Physical Fitness By Correlation of Vital Capacity and Certain Measurements of the Body. By Georges Dreyer, C. B. E., M. A., M. D. In collaboration with George Fulford Hanson; With a foreword by Charles H. Mayo, M. D. New York: Paul B. Hoeber. 1921.

Hitherto, our ideas of what is normal were based somewhat arbitrarily upon the determination of the average. For instance, some of the earliest investigations concerning the "normal" measurements as to height and weight of children were determined by measuring and weighing large numbers of children without any particular selection, without any uniformity as to method and detail, such as weighing the children unclothed or at least determining the weight of their clothing. This is true for the earliest studies of this sort by Quetelet, in 1835, as also those by Bowditch, in 1877, and for several of those following them. Manifestly, the average is by no means identical with the normal, nor does its knowledge yield any definite information that would be of practical value in determining the fitness physically of children, young people and adults complying with certain arbitrary standards.

In the volume before us, Doctor Dreyer has attempted very successfully to overcome the defects of earlier studies of this kind, the results of his investigation being of use particularly to actuaries of insurance companies, but also to physicians interested in industrial medicine, in public health, and so forth. Above all, Doctor Dreyer realizes, dealing not only with children but with adults as well, that the physical development may be normal individually for people under certain circumstances of work and otherwise. Consequently, he divides all workers into three classes, whose representatives show differences in physical measurements as regards muscular development or its lack. He stresses particularly the value of vital-capacity determinations for ascertaining physical fitness.

Despite the fact that the numerous statistical tables comprising the bulk of this volume are somewhat forbidding, still, it is

in truth interesting and enlightening. It should by all means be studied, more especially by industrial physicians and by school physicians.

GRAF: "IMPROVED AUTOHEMIC AND INTRAVENOUS THERAPY"

The Improved Technique of Autohemic and Intravenous Therapy. By Charles B. Graf, M. D. With a Preface by Dr. Albert Abrams. With Original 14 photographs. New York and Atlantic City. 1921.

The present-day method of autohemic therapy is new only in so far as the perfected technic is concerned and especially the mode of administration; that is to say, the parenteral (hypodermic) introduction of the prepared, highly diluted, blood which is usually autogenous. In our opinion, it does not quite deserve the ridicule, and much less the odium, to which it was exposed on its first introduction, although, in this respect, it but shares the fate of all innovations, no matter whether they be actually new or are rediscoveries of old truths.

Doctor Graf, the author of the little volume before us, attempts an explanation of the observations that blood taken from the patient, diluted, treated in certain purely mechanical ways and then re-injected, in carefully graded doses, influences this patient's vital processes profoundly and in many cases brings about a regeneration and a restoration to health. Furthermore, Doctor Graf presents a complete and exact guide for the preparation of the remedy (the patient's blood) so as to put it into a condition in which it shall constitute an energetic healing agent. If the claims that are advertised in support and in favor of autohemic therapy are true, even in a slight proportion, the somewhat startling price of Doctor Graf's book must still be considered as extremely low and the same must be said of the expensive apparatus required for autohemic work.

The Reviewer confesses that he has no personal experience with autohemic therapy. Nevertheless, the reports that he has read and the sources from which these reports emanate have aroused in him a lively interest amounting to a reasonable degree of confidence in this method of treatment. We believe that money expended in the purchase of Doctor Graf's book and of the

laboratory outfit is well spent by those practitioners who have an ability for laboratory work and who are accustomed to exactness and to the careful working out of details. We shall watch the further progress of autohemic therapy with intense interest, believing it quite possible that it presents a solution to numerous therapeutic problems that were hitherto unsolvable.

JENKINS: "THE PERFECT KNIGHT"

The Perfect Gentle Knight. By Hester Donaldson Jenkins, Ph. D. With an Introduction by Charles M. DeForest. Illustrated with Original Drawings and with Reproductions from Old Engravings. New York: World Book Company. 1921.

Here is a charming little booklet designed for children whom it takes back to the fascinating days (fascinating in retrospect!) when knighthood was in flower. It retells the attractive story of King Arthur and the knights at his round table, the Quest of the Holy Grail, the success of the perfect and blameless knight Sir Galahad.

The lesson of knighthood is then applied to modern times; since, for boys and girls, too, there is being conducted a great crusade called the modern health crusade.

The order is founded anew, as of Arthur, to be
 "A glorious company of flower of men,
 To serve as model for the mighty world,
 And be the fair beginning of a time"
 Of constant health in all America.

The little booklet is very attractive, too, and supplies a wholesome stimulus for, say, children from eight years up. We understand that it is the first of a series that is to be continued by the publishers.

DAWSON: "SMILES AND TEARS"

Smiles and Tears. A Book of Real Life. By Benj. E. Dawson, A. M., M. D., Kansas City, Mo., The Western Baptist Publishing Co., 1921.

This is a personal account of the life of a typical American. Born in a large family, fitted for life's struggles by an old-fashioned Christian upbringing, the lad, Dawson, started out to make his own way at the age of sixteen, attending school, teaching school, then entering a medical college from which he graduated at the age of twenty-three. After this reasonably full and busy period of preparation, Dec-

tor Dawson entered upon a life's work that was even more completely filled. For certain reasons, he abandoned the medical profession for a time, entering the ministry. The Reviewer has an idea that, especially in thinly settled districts, the combining of the duties of physician and minister (we do not say "preacher" deliberately) is an excellent thing.

Through hard and conscientious work, the Doctor succeeded against numerous heavy odds, and, when he re-entered the medical profession, he established an enviable reputation for successful conservative surgery.

In addition to the biographical chapters, the book contains many interesting and amusing relations of experiences, also philosophical musings and discussions; associated with much good common-sense teaching and advice. It is well worth an evening's leisure reading. Nor is it merely that. *Exempla docent*. The example of one man who has seen much and done much must afford stimulation to others who are still engaged in fighting their way upward.

BURR: "PSYCHOLOGY"

Practical Psychology and Psychiatry. By C. B. Burr, M. D. Fifth Edition. Revised and Enlarged. Illustrated. Philadelphia: F. A. Davis Company. 1921.

This treatise is intended more especially to meet the wants of students, nurses, and general practitioners; being concise and practical. The author has added to this edition a chapter on the prevention of insanity, which in some respects is the most valuable part of the book. In this, he points out a fact which has often been commented on, namely, that education and training, both in the home and in the school, have undergone a change of late years that is distinctly prejudicial to the development of a sound mind in a sound body. There has been a letting down of mental and moral discipline.

Whatever may have been the defects of the old fashioned country school, it can not be denied that its tendency was towards requiring the pupil to face difficult tasks rather than to go around them. Today, things are made easy for the child, and the result is, softness of mental fibre. Parents as well as teachers are to blame

for this; when pupils are given home work to prepare evenings, the parents often object that the children have no time or that the school is the place for study. The moving-picture show and other frivolous amusements take the place of the sound mental discipline furnished by a certain amount of digging and hard study on the part of the pupil. Some subjects have been so emasculated that they have lost much of their disciplinary value; notably is this true of grammar and arithmetic. Committing to memory has been almost abolished, from a mistaken idea that it is necessarily parrot-like.

The pupil who has learned to face difficult problems and dig them out for himself has thereby had his mental and moral fibre strengthened. He has learned courage and, in after-life, these qualities are an aid to that stability of character which is so notably lacking in many forms of insanity. To fill the mind with sound knowledge and to train it in the art of controlling its own activities, is a most valuable form of insurance against mental unbalance. Any system of education which belittles the value of committing to memory, and of facing hard problems, is radically faulty.

VAUGHAN: "SEX ATTRACTION"

Sex Attraction. By Victor C. Vaughan, Sc. D., M. D., LL. D., Dean of the Michigan School of Medicine, Ann Arbor. St. Louis: C. V. Mosby Company. 1920.

This little brochure is a lecture given to the teachers at the Michigan State Normal School. The reputation of the distinguished dean of Michigan will ensure for his utterances on this interesting subject a very wide reading. The lecture is not a discourse on venereal diseases but a brief scientific consideration of the physiologic and psychologic side of a most important question. It should be read by every teacher and by all who have anything to do with the guidance of the youth of either sex. The plan of having our youth grow up in ignorance of the true significance of

sex has been tried long enough; it is to be hoped that the day is not far distant when it will be universally recognized that knowledge is better than ignorance on every subject, and especially on this greatest of all in its influence on human happiness.

COW: "PHARMACOLOGY"

Pharmacology. By Douglas Cow, M. D., Examiner in Pharmacology, Cambridge University. Illustrated. London: J. and A. Churchill. 1920.

This little volume is one of a students' synopsis series. It is not intended nor adapted to take the place of the regular textbook on pharmacology, but rather to provide the student, in the crowded days just before examination, with a suitable means of rapidly reviewing the subject and refreshing his memory. Its alphabetical arrangement of matter with cross-reference, and its typography, are both designed to facilitate rapid yet thorough review. Such reviewing is perfectly legitimate and proper before any examination, and can not be called "cramming." The essence of the latter consists in overloading the memory with undigested matter, in order to produce a semblance of erudition.

MacNEAL: "PATHOGENIC MICRO-ORGANISMS"

Pathogenic Micro-Organisms: A Text-Book of Microbiology for Physicians and Students of Medicine. By Ward J. MacNeal, Ph. D., M. D. Illustrated. Second Edition. Revised and Enlarged. Philadelphia: P. Blakiston's Son and Company. 1920.

A well arranged, up-to-date, complete and yet not bulky treatise on bacteriology. Both the fullness of the table of contents and the judicious use of various forms of type greatly facilitate rapid review and research—features which will be appreciated by students preparing for examination and by the busy doctor seeking to refresh his memory upon some forgotten point.



Condensed Queries Answered

While the editors make replies to these queries as they are able, they are very far from wishing to monopolize the stage and would be pleased to hear from any reader who can furnish further and better information. Moreover, we would urge those seeking advice to report their results, whether good or bad. In all cases please give the number of the query when writing anything concerning it. Positively no attention paid to anonymous letters.

Answers to Queries

In answer to Query 6587, "Wild Nasturtium in Ivy Poisoning." This probably refers to jewel weed, wild balsam or touch-me-not. Called "touch-me-not" on account of manner in which the seed pods burst and scatter seeds when handled. Have read that the juice locally will cure ringworm. Have no personal experience with it.

Minn.

C. F.

The writer has several times had jewel weed (*impatiens pallida*) brought to his attention as a remedy for tinea circinata and somebody also suggested that it would prove an excellent remedy for eczema. The Eclectics use the expressed juice to "remove warts, cure ringworm, salt rheum, and so forth," and to cleanse foul ulcers. The bruised plant is usually applied to parts poisoned by rhus, and an ointment prepared by boiling the green plant in lard is recommended for piles. We have had no personal experience with *impatiens* and

believe that more definite remedial agents are at our disposal. The number of remedies recommended for ivy poisoning (most of them absolutely ineffective) is legion. Recently, a correspondent assured us that gasoline would prove curative in twenty-four hours. Two or three applications, he states, "settle the business."—Ed.

In answer to Query 6587, "Wild Nasturtium in Ivy Poisoning": There are numberless remedies for ivy poisoning. This one may not be new but I have not seen it spoken of in any journal—gasoline. I have had three cases; all recovered in forty-eight hours. Bathed parts freely every two hours. Three cases of poison oak; bathed in same manner; recovered quickly. Stops itching and inflammation. This is not my discovery. Got the idea from a chef in a hotel on the top of a mountain in California. Others try it and report.

E. V. A.

Illinois.

Queries

QUERY 6589.—"Paregoric Habit." J. D. H., Texas, has a friend who has been drinking paregoric regularly for about four years. "He consumes about 6 ounces every twenty-four hours; that is, he drinks 6 to 7 ounces every morning (no more), then he gets along very well until the next morning. He is very anxious to quit but it seems very hard for him to do so. However, with the help of something that will build up his nervous system and digestive organs, I believe he can overcome the habit. He has spent some fifty dollars trying a preparation put up by a St. Louis concern, but the use of this preparation causes gastralgia or heartburn. He can not use it at all."

A man who has been consuming 6 or 7 ounces of paregoric every twenty-four hours for four years, is not easily treated.

This means that the man has been consuming twelve to fourteen grains of opium daily and it is going to be a very difficult matter to withdraw the narcotic. The writer would rather treat half a dozen morphine addicts than one old paregoric consumer.

The best way would be, to first secure thorough purgation, and give the man just one-fourth the amount of paregoric to which he has been accustomed, administering, during the next two or three days, one-half to one xanthoxyloid, atropine and strychnine tablet (xanthoxyloid, gr. 1; atropine valerate, gr. 1-250; cactin, gr. 1-21; stychnine valerate, gr. 1-128; nu-

clein solution, min. 5) every three or four hours; then purge, and again reduce the paregoric. Continue thus until the patient is getting along with not more than 1 dram pro die. This can be reduced little by little and, as the patient acquires confidence in himself, ultimately relinquished entirely.

Should the stomach prove particularly troublesome, place him upon a liquid diet and give sodium bicarbonate in combination with charcoal and papain, after meals. If there is intense gastric irritation, you may, for some days give some such combination as anesthesin and cerium oxalate, an hour before meals. Gentian is an excellent bitter tonic in these cases and we have had very good results from a combination of: papain, gr. 1; pepsin, gr. 1; berberine hydrochloride, gr. 1-32; extract gentian, gr. 1; fifteen minutes before eating.

However, until the amount of paregoric the patient is taking has been reduced to virtually nothing, such adjuvants as tonics and reconstructants should be used cautiously, if at all.

J. D. H. should read Doctor O'Reilly's article, on the successful treatment of opium addiction, which appears on p. 606 of this issue.

QUERY 6590.—"Persistent Acholia in Child of Ten." S. G. M., Ohio, reported the case of a little girl who had gonorrhea. [May issue, p. 349, Query 6565.] "Now", he states, "she is much better. However, at that time, I called your attention to her stools as being pasty and white and I simply can not do a thing to relieve this condition."

"I have given her phosphate of soda, calomel, pancreobilein, and so forth, and other doctors have given her all manner of hepatic stimulants. She has taken drugs for over a year for the white stools, only to get dark stools for a few days, then they become white again. She has a sick spell about every six or eight weeks, lies around with a temperature of 101 degrees for a few days, then gets out again. There is no enlargement of the liver; no gallstones, or at least there is no pain to indicate such. She plays about as usual. You found many colon bacilli in the urine, last March.

"Each time she has these sick spells, there is pain and tenderness over the left ovary. Could that be due to gonorrheal infection? But, this liver trouble dates back far prior to the gonorrhea. I am now giving her a preparation of bismuth and hydrastis, as I assume a catharrhal condition of the bile ducts to exist. If you have any idea that will help me out, I should like to have it, as I am

about at the end of my resources. There is some mucus in the stools."

Your little girl patient, concerning whom you wrote to us some time ago, certainly is having a hard time of it. We are delighted to hear that the specific vaginitis has improved, but this infection probably will require a longish period of time to be fully overcome. Therefore, you will have to watch your patient continuously. The periodical "sick spells", with pain and tenderness over the left ovary, in all probability are due to the effects of the specific infection. It seems to us that a course of combined gonorrheal bacterin would be a very good thing.

As for the hepatic affection, owing to which there is a deficient secretion of bile, causing the stools to be pasty and white—that condition seems to have become chronic. The occasional attacks of ailing (about every six or eight weeks), with temperature of 101 degrees for a few days, suggest periodical engorgement of the liver. We are not at all sure that there are no gallstones present, the absence of pain being no definite criterion. You do not say whether the conjunctivæ or the skin show a yellow tint? It seems to us that such a condition should obtain in view of the fact that at least some bile must be secreted and that very little, if any, passes into the intestines.

In order to relieve that condition, we suggest the administration of bilein, say, 1-8 grain, three times daily, after meals, aided, perhaps, by colchicine, gr. 1-128, once or twice a day. In view of the tender age of the patient, the dose of colchicine must be graded carefully, an overdose guarded against. This would be indicated by the occurrence of diarrhea and vomiting. Probably the preferable way to give colchicine would be in this combination: calcium carbonate, grs. 10; lithium carbonate, gr. 1; colchicine gr. 1-500; aromatics q. s. Since the dose here is only gr. 1-500, and the other ingredients might be expected to help conditions materially, our plan then would be to administer one such tablet three times a day with much water, and bilein, gr. 1-8—both after meals. A mineral water would increase the good work, and during the period of white, pasty stools the food should contain little or no fat.

It is quite possible that a bacterin, either stock or autogenous, containing colon bacilli and associated organisms, and given at periods of from eight to twelve days, in care-

fully graded doses, would stimulate an immunizing response through which the existing irritation of the liver might be relieved. The symptoms are not exactly those of obstruction of the biliary passages. As far as we can judge from the distance, it seems rather that the liver itself is at fault.

We hope that something in what we have said will aid you in further benefiting your little patient, and shall await with interest your further report.

QUERY 6591.—"Necrosis Following Rattlesnake Bite." I. M. H., Texas, writes: "I had an unfortunate experience, recently. A young man was bitten on the thumb by a diamond rattlesnake. He corded his arm and came for help. A permanganate solution was injected into his hand around the bite. In a short time, he began to vomit red fluid, then to purge red fluid and his urin was red. Twelve days afterward, his hand was rotten and had to be amputated at the wrist.

"Please tell me if this man lost his hand from snake bite or from the permanganate injected into the tissues, and, if you have anything better for snake bites, please inform me. I do not care to have this experience again. Another thing, after the hand was swollen and edematous, I slit the skin in several places and it began to slough at these places. Please tell me if that was bad or good practice. I suspect, this man lost his hand more from medication than from snake poison and, if you think so too, don't hesitate to say so. But, please tell me how to handle snake bite in the future."

Your report of a case of rattlesnake bite is of interest. We understand that you injected a solution of permanganate of potassium (strength not stated) around the wound and that soon afterwards the patient vomited and discharged through bowels and kidneys "red fluid." The hand itself became highly septic and had to be amputated at the wrist. You ask whether this man lost his hand from snake bite or from the permanganate of potassium.

In order to quiet your apprehension, we will say, at the outset, that the hypodermic injection of permanganate of potassium solution all about the seat of the bite is good practice and generally recommended, for instance, by Hobart Amory Hare ("Practical Therapeutics"). Owing to the high oxidizing power of this remedy, it has been asserted by Weir Mitchell and Reichert to be the most efficient antidote to snake venom if placed in the wound before the poison is absorbed. It should also be injected hypodermically all about the seat of the bite.

Why then, you ask very pertinently, was the hand lost despite your treatment?

A member of our staff suggests, very correctly, we believe, that, in all probability, your hypodermic needle entered a vein and that the entire amount of permanganate of potassium was injected direct into the circulation without coming in contact with the immediate surrounding of the bite at all. That would account for the rapid diffusion of the substance through the organism, for the vomiting, purging and urinating of red fluid and also for the failure to counteract the local action of the venom. The tissues involved went through the customary phases to necrosis and thus the necessity to amputate is explained.

There is one consolation in the fact that your man got off with the loss of one hand. It is our opinion that the injection of permanganate of potassium solution saved his life which otherwise would have been forfeited.

As to whether there is anything better for the treatment of snake bite than permanganate of potassium, opinions differ. Personally, we doubt whether there exists a more efficacious treatment. It has been suggested that large doses of calcium sulphide internally would be effective; we would not, however, care to experiment with that remedy, however highly we think of it in cases where there is more time. Antivenine is available and is being prepared by H. K. Mulford Company, we believe. However, in most cases, there would be no time to procure such a specific antitoxin. Still, if you were to keep it on hand, renewing your supply with sufficient frequency to keep it fresh and active, you might be prepared for later emergencies of the same kind.

The fact that sloughing commenced at those places on the swollen and edematous hand where you had made incisions is nothing to be wondered at and does not argue that you were guilty of bad practice.

From Musser and Kelly, "A Handbook of Practical Treatment," Vol. 1, p. 763, we reproduce the following:

"The objects of treatment in snake-poisoning are (1) to prevent absorption of the poison; (2) to destroy or neutralize it; (3) to accelerate its elimination; (4) to treat symptoms of imminent danger.

"To prevent absorption, the surest and best means is the ligature. This, of course, is applicable only when the bite is on an extremity, as most bites are, fortunately. All writers

suggest a ligature between the bite and the body, some recommending multiple ligatures in this situation. The use of the Esmarch bandage has been especially recommended. Caution must be used in removing the ligature as this will be followed by a sudden flooding of the system with the poison, except in those instances where the poison has caused intravascular thrombosis. For this reason, the best authorities direct that the ligature be loosened only a few seconds at a time and then reapplied. In connection with the ligature, suction of the wound may be used, but this is seldom of value unless the wound is unusually open or unless it be preceded by free incision of the injured part. This, moreover, can be of service only if done immediately following the bite.

"To destroy or neutralize the poison, local and general procedures are employed. For local application, innumerable remedies have been suggested; their very number is an index of their futility. Various caustic substances, including the actual cautery, have been used for this purpose. They are usually contraindicated on account of the tissue destruction which they cause. Of the large number of preparations which have been suggested, a few have obtained some shreds of reputation. Permanganate of potash, first recommended by Fayer, has gone through various stages of popularity and disgrace; its use has recently been revived by the Indian school. Rogers has reported 19 cases treated with it, with recovery in 17. According to Lamb, it should be used in conjunction with free incision, into which the pure crystals, slightly moistened, should be freely rubbed. Lauder Brunton has devised a small lancet with a hollow handle in which the permanganate is to be carried. The instrument is cheap and convenient, and is meant to be carried by all exposed to the danger of snake-bite. Of other chemicals, 1-percent chromic acid solution is said to be of value, and Calmette has recommended a 1:60 solution of hypochlorite of lime. Ammonia has also been used, but acts purely as a stimulant, and should not be injected locally, as it causes thrombosis and other undesirable complications."

As to the, specific antitoxins or antivenines of which we have already spoken, investigations have not matured sufficiently, as far as we can find out, to be decisive. As already mentioned, a rattlesnake bite antitoxin is available and we believe that it has been employed with good success. Continuing from Musser and Kelly's work:

"To accelerate the excretion of snake venom, one measure seems worthy of attention, and that is, gastric lavage. Snake venom, like morphine and many other alkaloids, is excreted in part by the gastric mucosa, and it is well to practice lavage in these cases, repeating the operation at intervals of half an hour until the patient is out of danger.

"The symptoms of imminent danger in these cases are, respiratory and cardiac failure. For

the respiratory paralysis, artificial respiration is indicated. It should be kept up for a long time, for it is to be remembered that, if the patient be tided over the crisis, recovery is often prompt, and this is especially characteristic of crocalus poisoning. The use of strychnine has been highly recommended. It is said to be almost a specific, and the failures under its use are attributable to insufficient doses. The sulphate should be given hypodermically in doses of 1-6 grain and should be repeated at half-hour intervals until slight tetanic convulsions appear. The tolerance to the drug in these cases is said to be remarkable. Rogers recommend adrenalin in poisoning by venoms which paralyze the vasomotor centers. Atropine, in doses of 1-120 to 1-60 grain hypodermically has been recommended as a cardiac stimulant. The use of alcoholic stimulants in moderation is of service, but the indiscriminate use of whisky in enormous doses (a quart or more at one sitting, for example), a much-vaunted lay remedy, can not but lead to harm; indeed, it is a question whether some of the fatal cases of rattlesnake-poisoning have not been due to acute alcoholism rather than to the effects of the venom.

"The treatment of the local lesion is particularly important in poisoning by viperines, in as much as general sepsis may result from infection of the wound. In case the bite involves a finger or toe, it may be advisable to amputate the member, but the necessity for this must be decided by the judgment of the physician. The main point to be borne in mind is that the local injury must be treated with the strictest regard to asepsis and antisepsis. In order to prevent infection, the general resistance of the patient must be improved by means of an abundance of nourishing food, rest, fresh air, and general tonics."

QUERY 6592.—Nephritis. W. A. R., Tennessee, has a patient, wife of dentist. She drives a car quite a little; does her own housework. Age fifty-three. Weight 115; lost twenty pounds in six months. Has spots before eyes. Constant pain in back and right side. Appetite poor; bowels constipated. Headache quite a little the past two months. Drinks very little water, claims it distends her. Takes two glasses of iced tea per day, two cups of coffee and one glass of Cocoa Cola per day. She has been taking fair amounts of urotropin for the last year. She has morphine habit; I don't know just how much, as she is sensitive about that; still, quite a little. Any suggestions you may offer as to diagnosis and treatment will be appreciated.

From your recent note, we learn that your patient has lost twenty-six pounds in six months, weighing now one hundred and fifteen pounds. She complains of spots before the eyes, pain in the back and in right side. The appetite is poor; there is constipation. There is much headache.

All these symptoms might be explained

by the existing nephritis and would probably be relieved in the degree in which the renal inflammation is diminished. Just how much the morphine addiction stands in relation is difficult to say offhand. You would do well to gain her full confidence and get her to tell you all about it.

The treatment for nephritis is, of course, largely dietetic, the first consideration being to overcome the existing constipation which constantly aggravates the trouble. After a preliminary clean-out, with blue mass and soda, followed by saline laxative or salithia, or citrate of magnesia, this patient might be put on a gentle laxative drug, such as mineral oil, cascara sagrada, compound licorice powder—sufficient to maintain a satisfactory action of the bowel movements. This, of course, should be regulated in course of time by a proper diet.

Under the circumstances, it will be well to exclude meat for a time, ordering milk in sufficient portions, and it may be diluted with Vichy or charged water (syphon) or with any gentle mineral water. In addition to milk, one egg a day and, perhaps, very small helpings of cream cheese would comprise the protein-bearing food-stuffs. Further, the succulent vegetables, also cereals, are admissible and should be eaten in sufficient quantity to maintain nutrition; of course, together with the milk and eggs. Incidentally, bacon is permissible. The kind of food that is ordered must be regulated with consideration to its thorough utilization by assimilation and also to the removal of the waste through the bowels. That is to say, some foods with gentle laxative properties should be included.

By way of drugs, it will be wise to go carefully so as not to irritate the kidneys. Arbutin is, in the writer's opinion, a remedy of considerable merit and one that exerts a soothing and mildly-stimulating action. It is slightly antiseptic, an effect that is desirable in view of the fact that there are some colon bacilli and staphylococci present. Because of the latter circumstances, an autogenous bacterin would not come amiss and might be used carefully at sufficiently long intervals to utilize fully the immunizing response following each individual injection. General tonics, such as iron, arsenic, manganese, and so forth, probably will be indicated sooner or

later. Concerning these, we cannot say very much, because selection and administration will be dependent upon circumstances of which we have no cognizance.

As to the morphine addiction, let your patient read Doctor O'Reilly's article on the subject, that you will find on page 606 of this issue of CLINICAL MEDICINE.

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QUERY 6593.—“Paralysis Agitans.” R. R. S., West Virginia, has under treatment “a case of palsy which is not progressing satisfactorily. The hand stays swollen and pains in the shoulder persist. The patient has been given: potassium iodide, grs. 2, one-half hour before eating; strychnine sulphate, gr. 1-64, one-half hour after eating. Under this treatment he has better use of his hand. He is about forty years old. Can walk and talk.

“What is your treatment of bronchial asthma?”

We assume that you have eliminated other possibilities in your diagnosis and that the case on hand actually is one of paralysis agitans? This, as you will remember, develops, in the large majority of cases, between the years of forty and forty-five, occurring more often in men than in women.

Usually, the first evidence of the disease is tremor, slight at first, the hand commonly being the first to be affected. The movement is characteristic, the thumb and forefinger being approximated as in the act of making a pill. The hand is semi-rotated and the forearm trembles more or less while the upper arm may be affected but slightly, or not at all. The legs also are not involved, at least not at first. Later on, the foot is in constant motion and the head may be subject to a continuous nodding motion. The tremors cease in sleeping, but are continuous during waking hours. In the early stages of the disease, the tremors may be overcome temporarily by the purposeful use of the hand.

There usually is a characteristic gait and attitude of the patient. He walks with head and body bent forward, eyes directed toward the ground and a short distance ahead, and takes short, mincing and somewhat hurried steps, giving one the impression that he is about to fall; which he would do but for each successive step which, as it were, gives him a fresh center of gravity.

When tremor, attitude, gait and rigidity indicate paralysis agitans, the diagnosis is

easy enough. During the earlier stages, the disease may be confounded with multiple sclerosis, but this condition develops earlier in life; the volition and character of the tremor, the nystagmus and the scanning speech should serve to differentiate it. The peculiar tremor of the thumb and first finger, the muscular rigidity, peculiar gait, and temporary cessation of the tremor during and after some muscular effort distinguish paralysis agitans from senile tremor.

Ordinarily, the prognosis of paralysis agitans is very discouraging. While the onset of the disease is exceedingly slow, and the progress insidious, it progresses slowly, but, nevertheless, persistently. In a somewhat searching study, some years ago, the present writer failed to find a single report of a case that had actually been cured.

The treatment is unsatisfactory. Graduated exercise, tepid bath and massage should be employed to keep up the tone of the muscles. The patient should avoid excitement and overfatigue, both mental and physical. The long-continued use of arsenic may be of service, and for this we suggest intramuscular injections of sodium cacodylate, 1-2 mil, twice a week. These injections should be put deep into the muscle because, hypodermically, they are brutally painful. Hyoscine hydrobromide often relieves the symptoms. Parathyroid gland (1-2 grain of the powdered gland, three or four times daily) has given good results. Barbitol-Sodium may be of great service in giving quiet sleep.

We apprehend that strychnine, unless in very small doses, is hardly indicated, since it adds a further irritation to the existing one. In small doses, say, 1-128 grain, mornings and evenings, it may serve to stimulate the adrenal apparatus, which might be a good thing. Still, if there is any evidence of hyperadrenia, the strychnine should be omitted.

Iodide of potassium, or any iodine preparation, would seem exceedingly useful as an alterative. We believe, though, that you will get better results from sodium cacodylate.

2. To outline the treatment of bronchial asthma would require an article much longer than we are able to write. It must suffice to say that bronchial asthma has frequently

been shown to constitute the results of a hypersensitiveness to certain proteins among which horse dandruff, cat's hairs, dog's hairs, and so forth, are not without importance. In occasional cases only is the trouble determined through an existing autointoxication of intestinal origin (which, nevertheless, is almost always present) or by an autointoxication of bacterial origin, the focus for which may be found in the tonsils or in the gums, or elsewhere. If there is any history of an infectious disease, it would be well to search for a pus focus somewhere in the body and to eliminate that. In many instances, the nasal passages are at fault and require treatment.

Altogether, the problems of bronchial asthma are numerous, and the management of any case requires much careful and definite study.

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QUERY 6594.—“Pantopon.” W. D. W., Virginia, asks us to state the composition, physical properties and therapeutic uses of pantopon.

Pantopon is a mixture of the hydrochlorides of the alkaloids of opium in the proportion in which they exist in Smyrna opium, containing 50 percent of anhydrous morphine hydrochloride.

Pantopon, as it is prepared by the Hoffmann-LaRoche Chemical Works, Basel, Switzerland and New York, produces essentially the effects of opium, but, being devoid of its extractive, it may be used for hypodermic administration. It is probably absorbed rather more promptly and is free from the nauseant odor and taste of the ordinary opium preparations. It is used in the same conditions as those in which opium is indicated. The dose is 1-2 to 1-3 grain hypodermically or by mouth. One grain of pantopon-Roche is said to be equivalent to: 2 1-2 grains of extract of opium, U. S. P., 5 grains of powdered opium, U. S. P., 45 minims of tincture of opium, U. S. P., 6-10 grain of morphine sulphate, U. S. P.

This information may be found in “New and Nonofficial Remedies,” of the American Medical Association, and also in various textbooks on materia medica. The writer believes that pantopon was suggested first by Professor Sahli, of Bern, Switzerland, but is not quite positive on the point.